

DOUGLASVILLE-DOUGLAS COUNTY WATER AND SEWER AUTHORITY
DOUGLAS COUNTY, GEORGIA
STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT

100% SUBMITTAL

DDCWSA PROJECT NO. 22B4413-02



GENERAL

BRYANT K. ROGERS
REGISTRATION No. 31735

HVAC

NOT APPLICABLE

CIVIL

DAVID S. EHRHARDT
REGISTRATION No. 17321

PLUMBING

NOT APPLICABLE

ARCHITECTURAL

NOT APPLICABLE

FIRE PROTECTION

NOT APPLICABLE

STRUCTURAL

FREDERICK P. POWELL
REGISTRATION No. 31118

ELECTRICAL

NOT APPLICABLE

MECHANICAL

DAVID S. EHRHARDT
REGISTRATION No. 17321

INSTRUMENTATION

NOT APPLICABLE

I, ALAN BOWLING (GSWCC LEVEL II CERTIFICATION NO. 432), HEREBY
CERTIFY THAT I, OR MY AUTHORIZED AGENT HAVE VISITED THE SITE PRIOR TO CREATION OF THE
EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN AND HAVE VERIFIED THE PRESENCE OR
LACK THEREOF OF ALL STATE WATERS ON, OR ADJACENT TO, THE SITE.

Alan Bowling 6/26/2019
ALAN BOWLING DATE

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY
GILBERT B. SHEAROUSE - EXECUTIVE DIRECTOR

BOARD OF DIRECTORS

DAVID BOATRIGHT
E. JOHN CITIZEN
JEFF NOLES
KERRY RIGDON

ROCHELLE ROBINSON
S. LAYNE SMITH
TOM WORTHAN

SUBMITTED FOR APPROVAL

PROJECT ENGINEER

RECOMMENDED FOR APPROVAL

DEPUTY DIRECTOR OF ENVIRONMENTAL SERVICES

RECOMMENDED FOR APPROVAL

PROJECT MANAGER

RECOMMENDED FOR APPROVAL

ENGINEER, DDCWSA

MAY 2019

Hazen

5775 Peachtree Dunwoody Road, Suite
D-520

Atlanta, GA 30342

(404) 459-6363

PROJECT ENGINEER OF RECORD: DAVID S. EHRHARDT, P.E.



LOCATION MAP

GENERAL NOTES

INDEX OF DRAWINGS

GENERAL

1. EXISTING UTILITIES WERE LOCATED USING THE BEST AVAILABLE INFORMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD-VERIFY EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION. ALL UNDERGROUND UTILITIES DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED AND RETURNED TO ORIGINAL CONDITION AND UTILITY OWNER'S SPECIFICATIONS AT NO ADDITIONAL COST. CONTRACTOR SHALL NOT DISTURB THE CONTINUOUS AND PROPER OPERATION OF ALL EXISTING UTILITIES LOCATED ON OR ADJACENT TO THE PROJECT SITE AND WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT.
2. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH, AND SHALL AT ALL TIMES STRICTLY CONFORM TO, THE REGULATIONS OF THE "OSHA GENERAL INDUSTRY OCCUPATIONAL SAFETY AND HEALTH STANDARDS, AND OSHA SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION", AND OF APPLICABLE STATE AND LOCAL STANDARDS AND REGULATIONS.
3. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH, AND SHALL AT ALL TIMES STRICTLY CONFORM TO, ALL APPLICABLE REGULATIONS OF SUBPART "P" ENTITLED, "EXCAVATIONS, TRENCHING, AND SHORING" OF OSHA SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION "GENERAL CONSTRUCTION SAFETY ORDERS" AND THE OWNER'S SITE RULES AND REGULATIONS.
4. ALL DISTURBED AREAS SHALL BE GRASSED, SODDED, OR LANDSCAPED AS SPECIFIED UPON COMPLETION OF GRADING ACTIVITIES. ALL TEMPORARY SEEDING SHALL BE DONE IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.
5. IN ACCORDANCE WITH STATE LAW, CONTRACTOR SHALL CALL THE UTILITIES PROTECTION CENTER OF GA AT 1-800-282-7411 AT LEAST THREE WORKING DAYS PRIOR TO CONSTRUCTION FOR LOCATION OF UNDERGROUND UTILITIES. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL POT-HOLE AT HIS OWN RISK TO DETERMINE THE LOCATIONS OF UNDERGROUND UTILITIES AS NEEDED WITHIN THE PROJECT AREA. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THESE ACTIVITIES.
6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF DOUGLAS COUNTY, THE LOCAL MUNICIPALITY, AND/OR THE STATE HIGHWAY DEPARTMENT, AND APPLICABLE OSHA REGULATIONS, AS APPLICABLE.
7. THE CONTRACTOR SHALL NOTIFY THE DOUGLASVILLE-DOUGLAS COUNTY WATER & SEWER AUTHORITY (770) 949-7612 AT LEAST 24 HOURS PRIOR TO BEGINNING CONSTRUCTION. THERE SHALL BE NO CHANGES IN DRAWINGS WITHOUT WRITTEN APPROVAL BY THE DOUGLASVILLE-DOUGLAS COUNTY WATER AND SEWER AUTHORITY.
8. CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO THOSE AREAS INDICATED ON DRAWINGS FOR ACCESS, STAGING, AND UTILITY CONSTRUCTION.
9. CONSTRUCTION SIGNS FOR WORK WITHIN AND ADJACENT TO PUBLIC ROADS, HIGHWAYS, AND ALLEYS SHALL BE IN ACCORDANCE WITH GDOT STANDARDS.
10. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION OR THE SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO, AND THE ENGINEER WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO PERFORM OR FURNISH THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ACTS OR OMISSIONS OF THE CONTRACTOR OR OF ANY SUBCONTRACTOR, ANY SUPPLIER, ANY PERSON OR ORGANIZATION PERFORMING OR FURNISHING ANY OF THE WORK.
11. UTILITY LOCATIONS ARE FROM FIELD OBSERVATION AND/OR DOCUMENTATION FURNISHED BY THE OWNER AND/OR THE OWNER'S REPRESENTATIVES. NEITHER ACCURACY NOR COMPLETENESS OF THE UTILITIES ARE GUARANTEED BY TATE ENGINEERING & SURVEYING, INC. OR HAZEN AND SAWYER.
12. CONTRACTOR SHALL SUBMIT DETOUR PLAN FOR APPROVAL BY DDCWSA AND COORDINATE WITH 911 SERVICE
13. CONTRACTOR SHALL PROVIDE IN ACCORDANCE WITH THE M.U.T.C.D. (LATEST EDITION), ALL SIGNS, BARRICADES, ET. FOR THE DURATION OF THE PROJECT.
14. ENVIRONMENTAL ISSUES: WETLANDS, BUFFERS & SO FORTH WILL BE ADDRESSED BY THE DDCWSA AND/OR THEIR CONSULTANTS.
15. ORIGINAL SERVEY INFORMATION PROVIDED BY TATE ENGINEERING & SURVEYING, INC.
16. FOR SUBSURFACE SOIL INFORMATION SEE SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION FOR STEWART MILL OUTFALL SEWER - OCTOBER 17, 2017 BY GEOHYDRO ENGINEERS.
17. 24 HOUR CONTACT:
HERMAN BRYANT
678-639-9605
18. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL SURVEY THE EXISTING MH-1 TO MH-17 RIMS AND INVERTS. THE SURVEY SHALL BE PERFORMED BY A REGISTERED LAND SURVEYOR IN THE STATE OF GEORGIA. ELEVATIONS SHALL BE SUBMITTED IN TABULAR FORM TO THE ENGINEER.

PROJECT DATA:

1. PROJECT NAME: STEWART MILL ROAD SANITARY SEWER REPLACEMENT PROJECT
2. PROJECT LOCATION: DOUGLAS COUNTY
3. PROJECT ADDRESS: STEWART MILL AND REYNOLDS ROADS, DOUGLASVILLE, GA 30135
4. PRESENT AND PROPOSED USE: SANITARY SEWER
5. OWNER/DEVELOPER: DOUGLASVILLE-DOUGLAS COUNTY WATER AND SEWER AUTHORITY
8763 HOSPITAL DRIVE
DOUGLASVILLE, GEORGIA 30134
770 920-3819 - MIGUEL A. BACA, P.E.
6. ENGINEER: HAZEN AND SAWYER, P.C.
5775 PEACHTREE DUNWOODY ROAD, SUITE D-520
ATLANTA, GEORGIA 30342
404-459-6363 - DAVID S. EHRHARDT, P.E.
7. SURVEYOR: TATE ENGINEERING & SURVEYING, INC.
6 MAYS STREET
TALLAPOOSA, GA 30176
(P) 770-574-5100
(Q) (E) TESRTG@AOL.COM

TREE PRESERVATION/PROTECTION PLANTING NOTES:

1. ALL LIMITS OF CONSTRUCTION AS INDICATED ON THE DRAWINGS SHALL BE CLEARLY IDENTIFIED BY TREE PROTECTION FENCE PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE EXCEPT THOSE OPERATIONS NEEDED TO INSTALL EROSION CONTROL FACILITIES.
2. THE CONTRACTOR SHALL PROTECT ALL TREES AND VEGETATION ON THE SITE EXCEPT AS NOTED ON THE PLANS OR APPROVED BY DOUGLAS COUNTY ENGINEER OR INSPECTOR.
3. ALL TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO CLEARING AND TRENCHING.
4. TREE PROTECTION FENCE SHALL BE INSTALLED ALONG THE OUTER EDGE OF AND COMPLETELY SURROUNDING THE CRITICAL ROOT ZONES OF ALL SPECIMEN TREES OR STANDS OF TREES, OR OTHERWISE DESIGNATED TREE PROTECTION ZONES PRIOR TO ANY LAND DISTURBANCE. SPECIMEN TREES AND TREE PROTECTION ZONES SHALL BE FLAGGED BY DOUGLAS COUNTY PRIOR TO NOTICE TO PROCEED.
5. ALL TREE PROTECTION ZONES SHALL BE DESIGNATED WITH "TREE SAVE AREA" SIGNS.
6. WHEN DIGGING NEAR TREES, THE CONTRACTOR SHALL PRUNE ALL EXPOSED ROOTS ONE (1) INCH IN DIAMETER AND LARGER ON THE SIDE OF THE TRENCH ADJACENT TO THE TREES. PRUNING SHALL CONSIST OF MAKING A CLEAN CUT FLUSH WITH THE SIDE OF THE TRENCH TO PROMOTE NEW ROOT GROWTH.
7. PRUNING OF TREE LIMBS TO PROVIDE CLEARANCE FOR EQUIPMENT AND MATERIALS SHALL BE DONE ACCORDING TO STANDARD ARBORICULTURAL PRACTICE.
8. ALL BUFFERS AND TREE SAVE AREAS ARE TO BE CLEARLY IDENTIFIED WITH TREE PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE.
9. THINNING IS ALLOWED AND MAY INCLUDE MANUAL REMOVAL OF NON-SPECIMEN TREES WITHIN THE CRITICAL ROOT ZONE OR DRUPLINE OF THE SPECIMEN TREE IN THE LANDSCAPE INSTALLATION PHASE OF DEVELOPMENT ONLY. THINNING INCLUDES MANUAL REMOVAL (NO MOTORIZED/WHEELED OR TRACK VEHICLES ALLOWED WITHIN THE CRITICAL ROOT ZONE OF THE SPECIMEN TREE).
11. NON-VEGETATIVE MATERIAL TO BE REMOVED MANUALLY.

A COMMERCIAL APPLICATOR LICENSE AND A PESTICIDE CONTRACTOR LICENSE ARE REQUIRED BY THE CONTRACTOR IF THE USE OF HERBICIDES ARE NECESSARY FOR NOXIOUS PLANT MATERIAL REMOVAL.

EROSION, SEDIMENTATION AND POLLUTION CONTROL NOTES:

1. THESE EROSION AND SEDIMENT CONTROL MEASURES SHALL APPLY TO ALL FEATURES OF THE CONSTRUCTION SITE.
2. SILT BARRIERS TO BE PLACED AS SHOWN AND/OR AS DIRECTED BY THE PROJECT ENGINEER AND/OR THE COUNTY INSPECTOR.
3. NO CLEARING, GRADING, TRENCHING, FILLING, OR OTHER LAND DISTURBING ACTIVITIES SHALL BE PERMITTED UNTIL APPROVED EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED, EXCEPT THOSE OPERATIONS NEEDED TO INSTALL SUCH MEASURES.
4. EROSION CONTROL MEASURES SHALL BE EMPLOYED DURING CONSTRUCTION TO MINIMIZE SITE GENERATED WATERBORNE SILT AND DEBRIS.
5. EROSION CONTROL MEASURES SHALL BE INSPECTED DAILY AND AFTER EACH RAIN AND REPAIRED BY GENERAL CONTRACTOR OR AN ASSIGNED SUBCONTRACTOR.
6. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONTINUOUSLY MAINTAINED BY THE CONTRACTOR DURING THE CONSTRUCTION PHASE OF THE PROJECT AND UNTIL PERMANENT STABILIZATION OF ALL DISTURBED AREAS ARE ACCOMPLISHED. TEMPORARY CONTROL MEASURES SHALL THEN BE REMOVED BY THE CONTRACTOR.
7. CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE ALL EROSION CONTROL AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE CURRENT EDITION OF THE GEORGIA EROSION AND SEDIMENT CONTROL HANDBOOK.
8. CONTRACTOR SHALL KEEP STREETS AND SIDEWALKS FREE OF MUD AND DEBRIS.
9. FAILURE TO PROPERLY INSTALL AND MAINTAIN EROSION CONTROL MEASURES MAY RESULT IN CONSTRUCTION BEING HALTED TO PERMIT ALLOCATION OF RESOURCES REQUIRED TO CORRECT THE DEFICIENCIES. THIS MAY JEOPARDIZE THE CONTRACTOR MEETING THE PROJECT SCHEDULE WHICH COULD RESULT IN LIQUIDATED DAMAGES BEING ASSESSED. IT IS THE CONTRACTOR'S FULL RESPONSIBILITY TO USE AND MAINTAIN EROSION CONTROL MEASURES THAT ARE IN ACCORDANCE WITH THE GEORGIA EROSION AND SEDIMENT CONTROL REGULATIONS AND CORRECT DIFFERENCES IN A TIMELY MANNER.
10. CONTRACTOR SHALL BE EXPECTED TO INSTALL ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES IF DEEMED NECESSARY BY ON-SITE INSPECTION TO PREVENT OFF-SITE SEDIMENTATION.
11. CONTRACTOR SHALL PROVIDE TEMPORARY GRASSING ON DISTURBED AREAS THAT ARE NOT RESTORED AFTER TWO WEEKS. EXCLUDED FROM THIS ARE AREAS THE CONTRACTOR CONTINUALLY UTILIZES FOR ACCESS, STAGING, AND STORAGE.
12. DOUGLAS COUNTY LAND DISTURBANCE PERMIT MUST BE DISPLAYED ON SITE AT ALL TIMES DURING CONSTRUCTION AND IN PLAIN VIEW FROM THE ACCESS OR PLANT ROAD.
13. ON-SITE BURIAL/DISPOSAL OF CONSTRUCTION AND DEMOLITION (C&D) WASTE IS PROHIBITED BY GEORGIA LAW AND THE GWINNETT COUNTY SOLID WASTE DISPOSAL SERVICES ORDINANCE. CONSTRUCTION AND DEMOLITION WASTE (C&D) MEANS BUILDING MATERIALS FROM CONSTRUCTION AND DEMOLITION OPERATIONS WHICH INCLUDE, BUT ARE NOT LIMITED TO: ASBESTOS-CONTAINING WASTE, WOOD, BRICKS, METAL, CONCRETE, WALL BOARD, PAPER AND CARDBOARD.
14. A RESPONSE TO A NOTIFICATION OF NON-CONFORMANCE OR INADEQUATE MEASURES SHALL BE MADE WITHIN 6 HOURS AFTER RECEIVING SUCH NOTIFICATION.
15. EROSION CONTROL DEVICES SHALL BE MAINTAINED BY REMOVING ALL SILT BEFORE THEY BECOME 1/3 FULL.

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO COMMENCING CONSTRUCTION OPERATIONS. LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT REFLECT THE ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXACT LOCATION AND ELEVATION OF UTILITIES AND OTHER UNDERGROUND LINES USING "NO-CUTS" AND TEST PITS. CONFLICTS BETWEEN NEW AND EXISTING UTILITIES SHALL BE IMMEDIATELY BROUGHT TO ENGINEER'S ATTENTION.
2. CONTRACTOR SHALL PROVIDE EXCAVATION SUPPORT, AS REQUIRED, DURING CONSTRUCTION TO MAINTAIN THE INTEGRITY OF THE EXISTING UTILITIES, ROADS, AND STRUCTURES.
3. CONTRACTOR SHALL CONFINED HIS ACTIVITIES WITHIN PUBLIC PROPERTIES AND THE ROAD R/W. CONTRACTOR SHALL INSTALL BOTH TREE PROTECTION FENCE IN ACCORDANCE WITH STANDARD DETAIL 0249104R ON DRAWING C012 AND SPECIFICATION SECTION 02100 AND SILT FENCE IN ACCORDANCE WITH SPECIFICATION SECTION 02276 ALONG THE SOUTHEAST SIDE OF THE ENTIRE ROAD R/W AND AROUND THE TREES SHOWN ON THE DRAWINGS TO PREVENT CONTRACTOR ACCESS TO PRIVATE PROPERTIES AND TREES TO REMAIN IN PLACE. CONTRACTOR SHALL PERFORM ALL MEASURES NECESSARY TO ADEQUATELY PROTECT ALL EXISTING TREES ADJACENT TO THE WORK AS IS CONSISTENT WITH THE NATURE OF THE WORK.
4. DUCTILE IRON PIPE SHALL BE PRESSURE CLASS 350. ALL DUCTILE IRON PIPE AND FITTINGS PROVIDED SHALL BE LINED ON THE INTERIOR WITH PROTECTO 401 CERAMIC EPOXY.
5. BEDDING - SEE DETAIL 0222102 ON SHEET D001.
6. UPON COMPLETION OF ALL OR ANY PART OF A SANITARY SEWER LINE, THE CONTRACTOR SHALL TEST SAID SEWER FOR ACCEPTABILITY. MANHOLES SHALL BE VACUUM TESTED. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER'S SEWER CONSTRUCTION INSPECTOR IN ACCORDANCE WITH SPECIFICATION SECTION 15000.
1. APPROVAL COVERS WORK ON DOUGLAS COUNTY RIGHT-OF-WAY ONLY. ANY REQUIRED APPROVALS FROM OTHER GOVERNING AUTHORITIES ARE THE APPLICANT'S RESPONSIBILITY.
2. DOUGLAS COUNTY ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY WORK PERFORMED, AS A RESULT OF PERMIT APPROVAL, WHICH MAY ENCRDACH ONTO PRIVATE PROPERTY. IT IS THE APPLICANT'S RESPONSIBILITY TO VERIFY THE RIGHT-OF-WAY AND DETERMINE THE LIMITS OF THE RIGHT-OF-WAY IN RELATION TO THE EXISTING ROADWAY PAVEMENT, PRIOR TO COMMENCEMENT OF WORK. REQUIRED PRIVATE EASEMENTS ARE THE APPLICANT'S RESPONSIBILITY. APPLICANT PROCEEDS AT APPLICANT'S OWN RISK.
3. NO ROAD CUTS ARE AUTHORIZED UNDER THIS PERMIT APPROVAL UNLESS AGREED TO BY THE DOUGLAS COUNTY DOT.
4. NO INDIVIDUAL, PARTNERSHIP, CORPORATION OR OTHER ENTITY OF ANY KIND WHATSOEVER SHALL ENGAGE IN ANY EXCAVATION OR TRENCHING EXCEPT IN COMPLIANCE WITH THE PROVISIONS OF SECTION 1021 OF THE DOUGLAS COUNTY UNIFIED DEVELOPMENT CODE AND IN COMPLIANCE WITH ANY APPLICABLE LAWS OF THE STATE OF GEORGIA OR OF THE UNITED STATES OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), OR ANY OTHER STATE OR FEDERAL GOVERNMENTAL ENTITY OR DEPARTMENT RULES AND REGULATIONS APPLICABLE TO EXCAVATING AND TRENCHING.
5. NO EXCAVATING SHALL BE PERFORMED UNTIL A PERMIT FOR SAME HAS BEEN OBTAINED FROM THE DEVELOPMENT SERVICES DEPARTMENT.
6. ALL CUT & FILL AREAS SHALL NOT EXCEED A 2:1 HORIZONTAL:VERTICAL SLOPE. ALL FILL SHALL BE COMPACTED AND SHALL NOT CONTAIN ORGANIC DEBRIS, INCLUDING TREES, STUMPS, BRUSH, CONSTRUCTION WASTE OR SIMILAR MATERIAL.
7. ALL TRENCHES AND PITS THAT ARE OPEN OVER NIGHT MUST BE PLATED.
8. ALL TRAFFIC CONTROL DESIGN, DEVICES, SIGNS AND PROCEDURES MUST BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
9. HARD SURFACE DRIVEWAYS TO BE BORED.
10. INGRESS & EGRESS TO ADJACENT PROPERTY OWNERS SHALL BE MAINTAINED @ ALL TIMES.
11. EXISTING DRIVEWAYS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN LIKE KIND MATERIALS.
12. YARDS AND OTHER MAINTAINED AREAS WILL BE CLEARED OF CONSTRUCTION MATERIALS AND OTHER DEBRIS AND RETURNED TO ORIGINAL OR BETTER CONDITION.
13. ALL WORK ZONE ACTIVITIES SHALL BE PERFORMED FOLLOWING INDUSTRY STANDARD SAFETY RULES, REGULATIONS, GUIDELINES, TECHNIQUES, PROCEDURES, ETC. SO AS TO PROTECT AND PROVIDE THE SAFEST POSSIBLE ROADWAY WORK ZONE FOR THE TRAVELING PUBLIC.
14. ALL DISTURBED SHOULDERS AND DITCHES SHALL BE RE-ESTABLISHED AND PERMANENTLY STABILIZED IN WIDTH, GRADE, SLOPE, ETC., EQUAL TO OR GREATER THAN THE ROADWAY CONDITIONS THAT EXISTED PRIOR TO COMMENCEMENT OF THE APPLICANT'S CONSTRUCTION ACTIVITIES.
15. SHOULDERS, DITCHES, AND SLOPES SHALL BE MAINTAINED IN A SAFE MANNER DURING APPLICANT'S CONSTRUCTION ACTIVITIES, (NO VERTICAL ROADWAY DROP-OFFS, NO EQUIPMENT PARKED IN ROADWAY CLEAR ZONE OR OTHER HAZARDOUS CONDITIONS).
16. DISTURBED AREAS SHALL BE PROGRESSIVELY RESTORED AS THE WORK ZONE MOVES. ALL RIGHT-OF-WAY RESTORATION SHALL BE ACCOMPLISHED ON A SCHEDULE ACCEPTABLE TO DOUGLAS COUNTY DOT.
17. LANE CLOSURES MAY BE IMPLEMENTED DURING NON-PEAK HOUR PERIODS ONLY. PEAK PERIODS ARE NORMALLY CONSIDERED TO BE 7:00 AM — 9:00 AM AND 3:00 PM TO 6:00 PM.
18. APPLICANT OR APPLICANT'S CONTRACTOR SHALL, AT THE DIRECTION OF THE DOUGLAS COUNTY DOT, IMMEDIATELY REMOVE ANY EXISTING LANE CLOSURE AND REOPEN ALL TRAFFIC LANES, IF A DOT REPRESENTATIVE DETERMINES EXISTING TRAFFIC CONDITIONS OR SAFETY ISSUES WARRANT SUCH ACTION.

DRAWING NUMBER DESCRIPTION

GENERAL

- G000 COVER SHEET
- G001 GENERAL NOTES AND INDEX OF DRAWINGS
- G002 ABBREVIATIONS, LEGEND & SYMBOLS

CIVIL

- C001 EXISTING OVERALL PLAN & PROFILE
- C002 PROPOSED OVERALL PLAN & PROFILE AND BORING LOCATIONS
- C003 PLAN & PROFILE STA 10+00 TO STA 24+00
- C004 PLAN & PROFILE STA 24+00 TO STA 31+00
- C005 PLAN & PROFILE STA 31+00 TO STA 42+00
- C006 PLAN & PROFILE STA 42+00 TO STA 49+23.18
- C007 STREAM RESTORATION DESIGN - IRW-1 PLAN & PROFILE
- C008 STREAM RESTORATION DESIGN - IRW-2 PLAN & PROFILE
- C009 EXISTING AND PROPOSED SANITARY SEWER STREAM CROSSING PLAN
- C010 STREAM RESTORATION DETAILS
- C011 STREAM RESTORATION DETAILS FOR IRW-1 & 2
- S001 SECTION AND DETAIL
- C012 NOTES
- C013 NOTES
- C014 CLEARING PHASE
- C015 CLEARING PHASE
- C016 GRADING PHASE
- C017 GRADING PHASE
- C018 FINAL PHASE
- C019 FINAL PHASE
- C020 ESC PLAN CHECKLIST
- C021 DETAILS

STRUCTURAL

- S001 SECTION AND DETAIL

STANDARD DETAILS

- D001 MISCELLANEOUS STANDARD DETAILS

DOUGLAS COUNTY DOT SPECIAL CONDITIONS

EMERGENCY PHONE NUMBERS

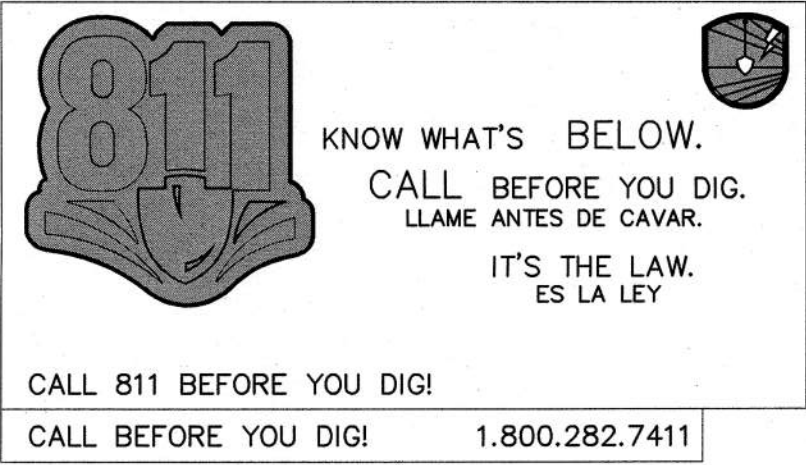
AMBULANCE: 911
POLICE: 911
FIRE: 911

DOUGLASVILLE-DOUGLAS COUNTY WATER AND SEWER AUTHORITY: (770) 949-7617

HAZEN AND SAWYER, P.C.: (404) 459-6363

GAS: AUSTELLGAS SYSTEM: (770) 948-1841 X3272
ELECTRIC: GREYSTONE POWER CO.: (770) 370-2084
GEORGIA POWER CO.: (404) 506-4569
COMMUNICATIONS: AT&T: (404) 216-7772
COMCAST: (770) 559-6879
ZAYO FIBER SOLUTIONS: (678) 666-2493

UTILITIES PROTECTION CENTER OF GA: 1-800-282-7411



				PROJECT ENGINEER: D. EHRHARDT	
				DESIGNED BY: B. MOSS	
				DRAWN BY: J. JORDAN	
				CHECKED BY: D. EHRHARDT	
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
REV	ISSUED FOR	DATE	BY		

100% SUBMITTAL



Hazen

HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



GENERAL
GENERAL NOTES AND
INDEX OF DRAWINGS

DATE: MAY 2019

HAZEN NO.: 31247-010

CONTRACT NO.: 22B4413-02

DRAWING
NUMBER:

G001

ABBREVIATIONS

AC	ANCHOR BOLT	E	EAST/EASEMENT	I	IRON	PAR	PARALLEL	T	TREAD
	ALTERNATING CURRENT or ASBESTOS CEMENT	EA	EACH	ID	INSIDE DIAMETER	PB	PLAT BOOK	T&B	TOP AND BOTTOM
AD	AREA DRAIN	ECC	ECCENTRIC	IF	INSIDE FACE	PC	POINT OF CURVE/PIECE	T&G	TONGUE AND GROOVE
ADDL	ADDITIONAL	EFC	EACH FACE	IN	INCH	PCC	POINT OF COMPOUND CURVE	TAN	TANGENT
ADJ	ADJUSTABLE	EFF	EFFLUENT	INCL	INCLUDED	PCF	POUNDS PER CUBIC FOOT	TBM	TEMPORARY BENCH MARK
AFF	ABOVE FINISHED FLOOR	EIP	EXIST IRON PIPE	INF	INFILTRANT	PCV	PRESSURE CONTROL VALVE	TC	TOP OF CURB
AGGR	AGGREGATE	ELEV	ELEVATION	INS	INSULATION	PE LINING	POTENTIAL LINING	TDH	TOTAL DYNAMIC HEAD
AL	ALUMINUM	ELEC	ELECTRIC/ELECTRICAL	INT	INTERIOR	PERF	PERFORATED	TECH	TECHNICAL
ALLOW	ALLOWANCE/ALLOWABLE	ELL	ELBOW	INVT	INVERT	PERP	PERPENDICULAR	TEL	TELEPHONE
ALT	ALTERNATE	ENGR	ENGINEER			PG	PAGE	TEMP	TEMPERATURE
APPROX	APPROXIMATE	ENT	ENTRANCE			P	POINT OF INTERSECTION	THERMO	THERMOSTAT
ARCH	ARCHITECTURAL	EOG	EDGE OF GRAVEL	JB	JUNCTION BOX	PI	PROPERTY LINE/PLATE	THK	THICK
ARV	AIR RELEASE VALVE	EOP	EDGE OF PAVEMENT	JCT	JUNCTION	PANL	PANEL	THRU	THROUGH
ASPH	ASPHALT	EQ	EQUAL	JT	JOINT	PP	POWER POLE	TOD	TOP OF DECK
		EQPT	EQUIPMENT			PREFAB	PREFABRICATED	TOP	TOP OF FOOTING
		EW	EACH WAY			PRV	PRESSURE RELIEF VALVE	TOM	TOP OF MASONRY/MANHOLE
B	BORING	EX	EXISTING			PS	PUMPING STATION	TOS	TOP OF SLAB
B&J	BORE AND JACK	EXC	EXCAVATE	L	LENGTH/ANGLE	PSF	POUNDS PER SQUARE FOOT	TOW	TOP OF WALL
BFE	BOTTOM OF FITTING ELEVATION	EXH	EXHAUST	LAB	LABORATORY	PSI	POUNDS PER SQUARE INCH	TOL	TOLERANCE
BFV	BUTTERFLY VALVE	EXP	EXPANSION	LAM	LAMINATED	PT	POINT OF TANGENT/POINT	TPS	TWISTED PAIR SHIELDED
BITUM	BITUMINOUS	EXT	EXTERIOR	LAT	LATERAL	PTN	PARTITION	TRANS	TRANSFORMER
				LB	POUND/LINE BACK	PV	PLUG VALVE	TYP	TYPICAL
BLDG	BUILDING			LF	LINEAR FEET	PVC	POLYVINYL CHLORIDE		
BLK	BLOCK			LG	LONG	PVM	PAVEMENT		
BM	BENCH MARK	FAB	FLAME ARRESTOR	LL	LIVE LOAD	PW	POTABLE WATER	UG	UNDERGROUND
BOC	BACK OF CURB	F&C	FRAME AND COVER	LP	LIGHT POLE			UH	UNIT HEATER
BOT	BOTTOM	F&G	FRAME AND GRATE	LP	LOW POINT	QTY	QUANTITY	UNFIN	UNFINISHED
BPV	BACK PRESSURE VALVE	FC	FLUSHING CONNECTION	LR	LONG RADIUS			UNKN	UNKNOWN
BRG	BEARING	FD	FLOOR DRAIN	LT	LIGHT			UNO	UNLESS NOTED OTHERWISE
BRK	BRICK	FDN	FOUNDATION	LTV	LIGHTING	RAS	RETURN ACTIVATED SLUDGE	UNO	UTILITY
BRZ	BRONZE	FIRE	FIRE EXTINGUISHER	LVR	LOUVER	R	RADIUS/RISER		
BTL	BOLT	FEMA	FEDERAL EMERGENCY	LWL	LOW WATER LEVEL	RBCW	REBAR WITH CAP		
BV	BALL VALVE		MANAGEMENT AGENCY			RCF	REINFORCED CONCRETE PIPE		
		FF	FINISH FLOOR			RD	ROAD/ROOF DRAIN		
		FH	FIRE HYDRANT			RECIR	RECIRCULATION	VAC	VACUUM
		FIN	FINISH	MAINT	MAINTENANCE	RECP	RECEPTACLE	VEL	VELOCITY
		FIX	FIXTURE	MANUF	MANUFACTURER	RECT	RECTANGULAR	VENT	VENTILATING/VENTILATION
CAB	CABINET	FL	FLASHING/FLOOR	MATL	MATERIAL	RED	REDUCER	VERT	VERTICAL
CB	CATCH BASIN	FLEX	FLEXIBLE	MAX	MAXIMUM	REF	REFERENCE	VOL	VOLUME
C/C	CENTER TO CENTER	FLG	FLANGE	MECH	MECHANICAL	REG	REGISTER	VP	VENT PIPE
CE	CONSTRUCTION EASEMENT	FLUOR	FLUORESCENT	MEMB	MEMBRANE	REIN	REINFORCING	VTR	VENT THROUGH ROOF
CEM	CEMENT	FLXC	FLEXIBLE CONNECTION	REM	REMOVE				
CF	CUBIC FEET	FM	FORCE MAIN	MET	METAL	REQD	REQUIRED		
CFM	CUBIC FEET PER MINUTE	FOC	FIBER OPTIC CABLE	MFR	MANUFACTURER	REST	RESTRAINED	WAS	WASTE ACTIVATED SLUDGE
CL	CAST IRON/CUBIC INCHES	FOG	FIREPROOF	MGR	MILLION GALLONS	REV	REVIEW	W	WEST/WIDTH
CL	CAST IRON PIPE	FRF	FIREPROOF	MGD	MILLION GALLONS PER DAY	RJ	RESTRAINED JOINT	W/	WITH
CL	CENTER LINE	FRP	FIBERGLASS REINFORCED	MH	MANHOLE	RM	ROOM	WF	WIDE FLANGE
CL2	CHLORINE			MIN	MINIMUM	RND	ROUND	WH	WALL HYDRANT
CLKG	CAULKING	FST	FINAL SETTLING TANK	MISC	MISCELLANEOUS	RO	ROUGH OPENING	WI	WROUGHT IRON
CLR	CLEAR	FT	FOOTING/FITTING	NJ	MECHANICAL JOINT	RPM	REVOLUTIONS PER MINUTE	WL	WATER LEVEL
CLR	CORRUGATED METAL PIPE	FTG	FOOTING/FITTING	MDG	MOLDING	RT	RIGHT	WO	WINDOW OPENING
CMU	CONCRETE MASONRY UNIT	FURR	FURRING/FURRED	MO	MASONRY OPENING	RTU	REMOTE TERMINAL UNIT	WO	WINDOW OPENING
CO	CLEANOUT			MOD	MODIFY/MODIFIED	R/W	RIGHT OF WAY	W/O	WITHOUT
COE	U.S. ARMY CORPS OF ENGINEERS	G	GAS/GAS LINE	MON	MONUMENT			WP	WATERPROOF
COL	COLUMN	GA	GAUGE	MOT	MOTOR			WPGF	WATER PROOFING
COMM	COMMUNICATIONS	GAL	GRANULAR ACTIVATED CARBON	MSE	MECHANICALLY	S	SOUTH/SLOPE	WPT	WALL PENETRATING TYPE
CONC	CONCRETE	GAL	GALLON		STABILIZED EARTH	SAN	SANITARY	WS	WATERSTOP
CONST	CONSTRUCTION	GALV	GALVANIZED	MTD	MOUNTED	SBL	SURVEY BASELINE	WSE	WATER SURFACE ELEVATION
CONT	CONTINUOUS	GC	GENERAL CONTRACTOR	MTG	MOUNTING	SCH	SCHEDULE	WSP	WEATHERSTRIP
CONTR	CONTRACTOR	GEN	GENERATOR	MULT	MULTIPLE	SD	STORY/SITE DRAIN	WT	WEIGHT
CORP	CORPORATION	GI	GALVANIZED IRON			SECT	SECTION	W/T	WATERLIGHT
CORR	CORRIDOR	GL	GLASS			SERV	SERVICE	WV	WATER VALVE
CP	CONCRETE PLANK	GPM	GALLONS PER MINUTE	N	NORTH	SEW	SEWER	WWF	WELDED WIRE FABRIC
CPVC	CHLORINATED POLYVINYL CHLORIDE	GR	GRADE	NA	NOT APPLICABLE	SF	SQUARE FEET		
CRS	COURSE	GV	GATE VALVE	NF	NEAR FACE	SHT	SHEET		
CT	CERAMIC TILE	GW	GUY WIRE	NGS	NATURAL GAS	SI	SQUARE INCH	YD	YARD
CJ	CONTROL JOINT	GYP	GYPSUM	NIC	NOT IN CONTRACT	SIM	SIMILAR	YR	YEAR
CU	COPPER	GSE	GROUND SURFACE ELEVATION	NO	NUMBER	SJ	STEEL JOIST		
	CHECK VALVE			NOM	NOMINAL	SPEC	SPECIFICATION		
CW	COLD WATER			NPW	NON POTABLE WATER	SQ	SQUARE		
CY	CUBIC YARD	H	HEIGHT	NTS	NOT TO SCALE	SS	SANITARY SEWER		
		HB	HOSE BIBB			SST	STAINLESS STEEL		
		HDPE	HIGH-DENSITY POLYETHYLENE			ST	STREET		
		HDW	HARDWARE	OC	ON CENTER	STA	STATION		
DA	DEFONATOR ARRESTOR	HEX	HEXAGONAL	OD	OUTSIDE DIAMETER	STD	STANDARD		
DB	DEED BOOK	HM	HOLLOW METAL	OF	OUTSIDE FACE	STG	STORAGE		
DC	DIRECT CURRENT	HORZ	HORIZONTAL	OFF	OFFICE	STR	STIRRUP		
DET	DETAIL	HP	HORSEPOWER	OHE	OVER HEAD ELECTRIC	STL	STEEL		
DIA	DIAMETER	HPT	HIGH POINT	OPER	OPERATOR	STR	STRUCTURAL		
DIAG	DIAGONAL	HTR	HEATER	OPNG	OPENING	STRU	STRUCTURAL		
DIM	DIMENSION	HVAC	HEATING, VENTILATION AND AIR CONDITIONING	OPP	OPPOSITE	SUB	SUBSTITUTE		
DIP	DUCTILE IRON PIPE			ORIG	ORIGINAL	SUP	SUPPLY		
DISCH	DISCHARGE	HW	HOT WATER	OT	OPEN TRUSS	SUP	SUPERINTENDENT		
DIST	DISTRIBUTION	HWL	HIGH WATER LEVEL	OVHD	OVERHEAD	SUR	SURFACE		
DJ	DOUBLE JOIST	HWY	HIGHWAY			SUSP	SUSPENDED		
DL	DEAD LOAD	HYD	HYDRAULIC			SW	SWITCH		
DN	DOWN					SWBD	SWITCHBOARD		
DOZ	DOZEN					SWS	SIDE WATER DEPTH		
DR	DOOR					SYM	SYMMETRICAL		
DWG	DRAWING								
DWGS	DRAWINGS								
DWL	DOWEL								

PIPE DESIGNATIONS

D	DRAIN
FA	FOUL AIR
FD	FLOOR DRAIN
FM	FORCE MAIN
NG	NATURAL GAS
NPW	NON-POTABLE WATER
PW	POTABLE WATER
RD	ROOF DRAIN
RWW	RAW WASTEWATER
SA	SERVICE AIR
SD	STORM DRAIN
SPD	SUMP PUMP DRAIN
SS	SANITARY SEWER
SURGE	SURGE TANK PIPING
SW	SEAL WATER

LINETYPES

	PROPOSED ITEMS
	EXISTING ITEMS
	HIDDEN ITEMS
	CONSTRUCTION LIMITS
	SANITARY FORCE MAIN
	WATER LINE
	GAS LINE
	UNDERGROUND POWER LINE
	OVERHEAD POWER LINE
	UNDERGROUND COMMUNICATION
	PROPERTY LINE
	PROPOSED SILT FENCE
	PROPOSED STONE FILTER
	PROPOSED TEMPORARY SEDIMENT
	PROPOSED CURB INLET SEDIMENT
	NEW PAVEMENT/STRUCTURE
	EXISTING PAVEMENT TO BE RESURFACED
	CENTER LINE
	MATCH LINE

EXISTING SURVEY LEGEND

F.H. FIRE HYDRANT DIP DUCTILE IRON PIPE IPF IRON PIN FOUND IPS IRON PIN SET (1/2" REBAR U.N.O.) LLL LAND LOT LINE N/O NOW OR FORMERLY SMWH FORCE MAIN MANHOLE O.F. OPEN TOP PILL H.G. HEAD WALL CMP CORRUGATED METAL PIPE CRP REINFORCED CONCRETE PIPE CLEF CHAIN LINK FENCE LP LIGHT POLE R PROPERTY LINE WAVE CONTINUES I.E. INVERT ELEVATION	R/W RIGHT-OF-WAY E ELECTRIC LINE X FENCE LINE G GAS LINE EL ELECTRIC LINE W WATER LINE SS SEWAGE LINE SS SANITARY SEWER LINE FM FORCE MAIN E TRANSFORMER OH OVERHEAD CABLE P POWER POLE ELECTRICAL CONTROLS AND DEVICES WV WATER VALVE WM WATER METER EA. EQUALITY
--	---

STREAM RESTORATION AND EROSION CONTROL LEGEND

EX EASEMENT

EX EDGE OF WATER

EX GRADE (PROFILE)

EX PROPERTY LINE

EX TOPO MAJOR

EX TOPO MINOR

COIR MAT

TEMP ROAD AT CREEK

DIVERSION STONES

FILTER BAG

PROP GRADE (PROFILE)

PROP TOPO MAJOR

PROP TOPO MINOR


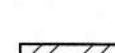
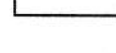
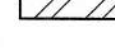
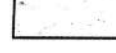
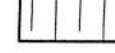
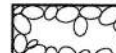
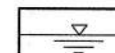
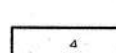
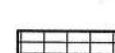
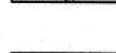
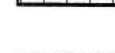


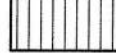

IRW STONE

SILT FENCE



























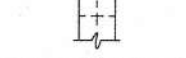

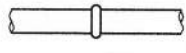

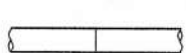

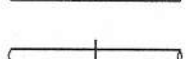

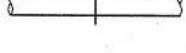

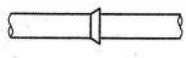



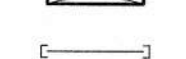

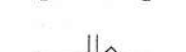




TEMPORARY PUMP AROUND

LEGEND

MATERIALS

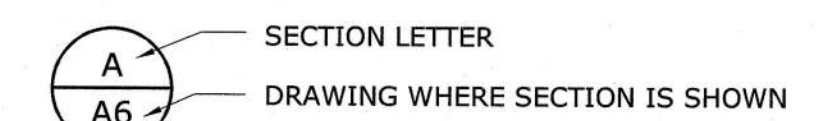
	GRADE OR EARTH		ROCK
	ASPHALT PAVING		STEEL
	SAND		INSULATION
	GRAVEL		WATER SURFACE
	CONCRETE		GRATING
	CONC. FILL OR GROUT		CHECKERED PLATE
	CONC. MASONRY UNIT		GLASS
	BRICK		WOOD BLOCKING

SYMBOLS

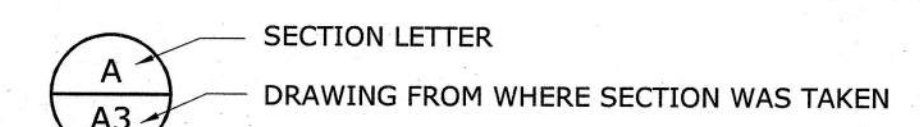
	DECIDUOUS (TREE)		
	CONIFEROUS (TREE)		TELEPHONE
	LIGHT POLE (LP)		FIRE HYDRANT (FH)
	POWER POLE WITH LIGHT		WATER VALVE (WV)
	POWER POLE (PP)		WATER METER (WM)
	UTILITY MANHOLE (UM)		AIR CONDITIONER (AC)
	SPOTLIGHT		ELECTRIC METER (EM)
	GAS METER (GM)		ELECTRIC UTILITY
	GAS VALVE (GV)		SIGN
	TELEPHONE PEDESTAL		MAIL BOX
	COMMUNICATION BOX		
	BOLLARD (BO)		
	GATE VALVE		WALL PENETRATION
	BUTTERFLY VALVE		MECHANICAL COUPLING
	PLUG VALVE		WELDED JOINT
	SWING CHECK VALVE		FLANGED JOINT
	GLOBE VALVE		MECHANICAL PUSH ON OR RESTRAINED JOINT
	PINCH VALVE		SLUICE GATE
	DIAPHRAGM VALVE		SLIDE GATE/STOP GATE
	BALL VALVE		FLUSHING CONNECTION
	BALL CHECK VALVE		HOSE BIBB
	HARNESSED FLANGED ADAPTER		QUICK DISCONNECT FITTING
	HARNESSED SLEEVE TYPE COUPLING		YARD HYDRANT
	SLEEVE TYPE COUPLING		FIRE HYDRANT
	HARNESSED FLEXIBLE COUPLING		SOIL BORING

SECTION AND DETAIL KEYING

DRAWINGS ARE CROSS REFERENCED IN THE FOLLOWING METHOD:
(A) A SECTION CUT ON DRAWING A3 IS IDENTIFIED AS FOLLOWS:



(B) THE SECTION SHOWN ON DRAWING A6 IS IDENTIFIED AS FOLLOWS:



DETAILS ARE CROSS REFERENCED IN A SIMILAR MANNER, EXCEPT DETAILS ARE IDENTIFIED BY A SQUARE WITH A NUMBER IN THE UPPER HALF.

STANDARD DETAILS ARE REFERENCED BY A UNIQUE SEVEN DIGIT NUMBER
AND ARE SHOWN ON THE CONTRACT DRAWINGS BY ONE OF TWO METHODS:



OR:



STANDARD DETAILS ARE COMPILED IN APPROXIMATE NUMERICAL ORDER IN THE BACK OF THE CONTRACT DRAWINGS ON THE D* DRAWINGS.

				PROJECT	D. EHRHARDT
				ENGINEER:	
				DESIGNED BY:	B. MOSS
				DRAWN BY:	J. JORDAN
				CHECKED BY:	D. EHRHARDT
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
REV	ISSUED FOR	DATE	BY		

100% SUBMITTAL



Hazen

HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER REPLACEMENT PROJECT



GENERAL ABBREVIATIONS, LEGEND & SYMBOLS

DATE: MAY 2019

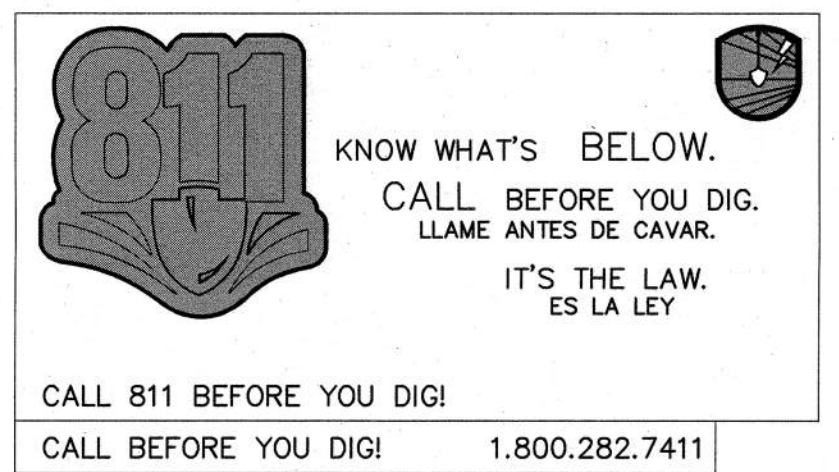
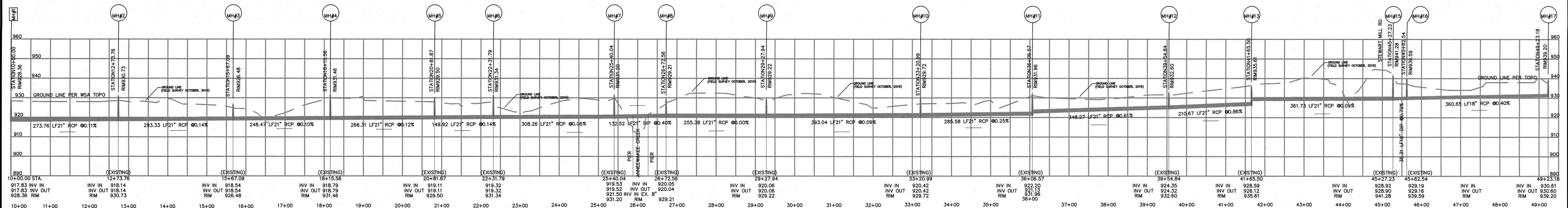
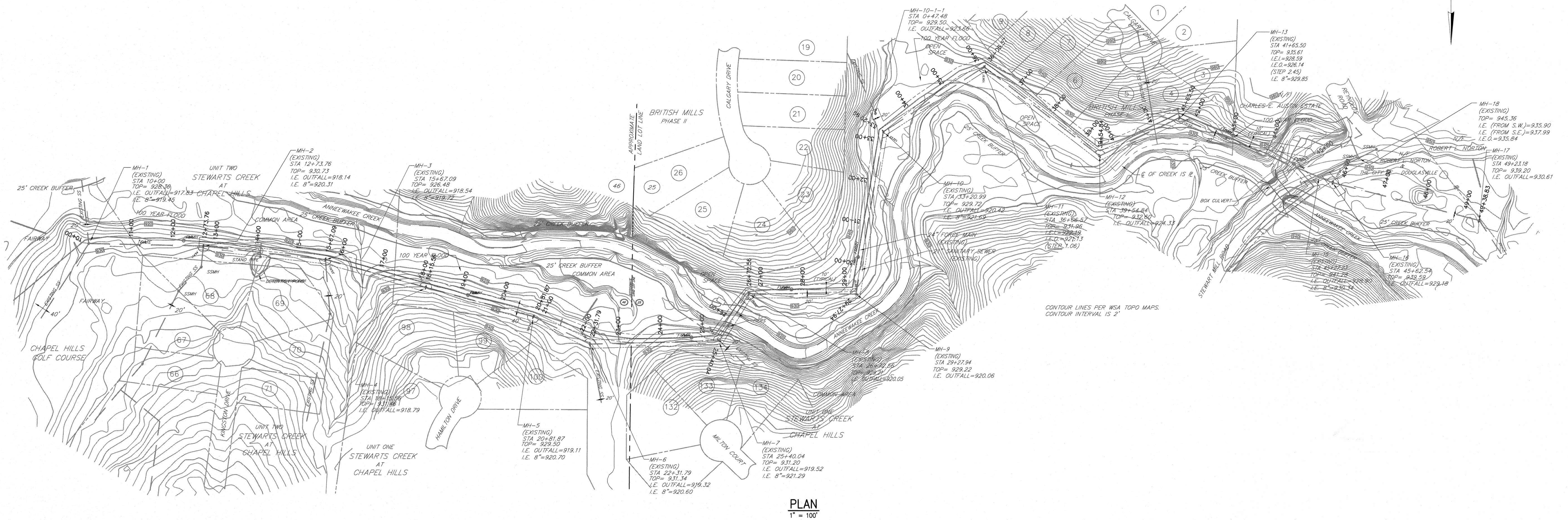
HAZEN NO.: 31247-010

CONTRACT NO.: 22B4413-02

DRAWING
NUMBER:

G002

NOTES:
1. THIS SHEET IS INCLUDED TO GIVE AN OVERALL VIEW OF THE EXISTING PIPE PROFILE (SCALE: AS SHOWN GRAPHICALLY)



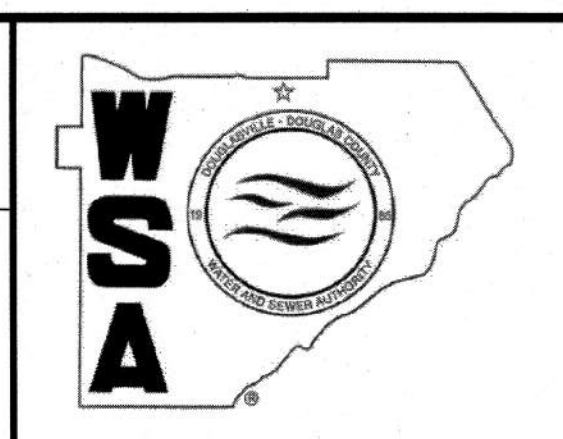
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	D. EHRHARDT
DESIGNED BY:	B. MOSS
DRAWN BY:	J. JORDAN
CHECKED BY:	D. EHRHARDT
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
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ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT

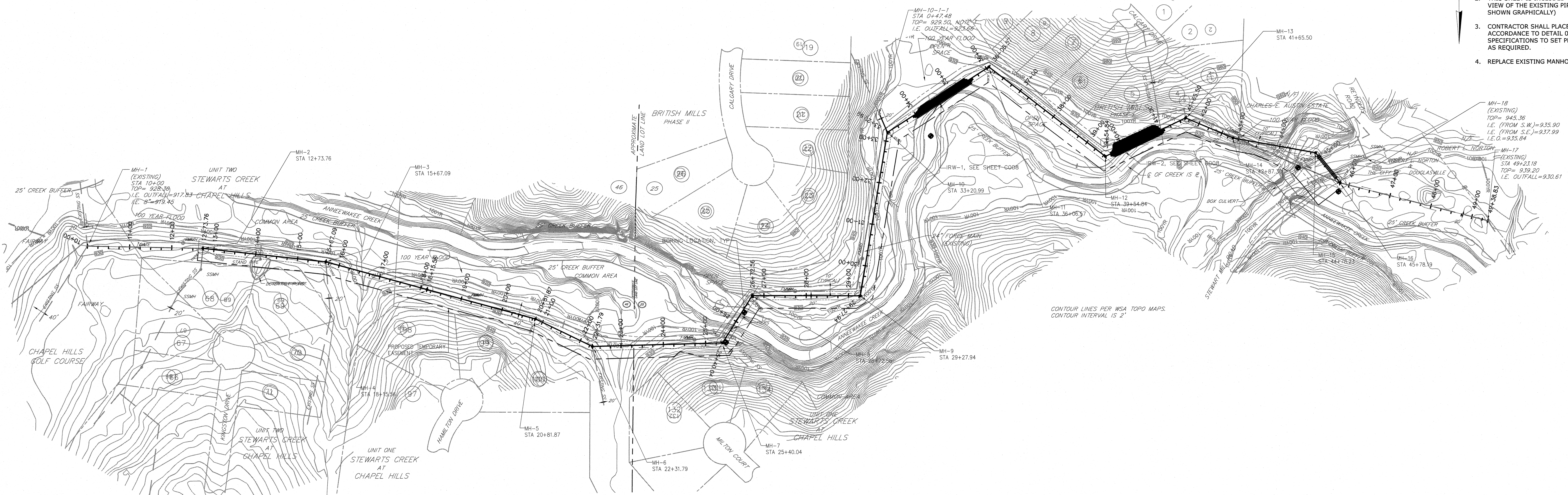


OUTFALL SEWER
CIVIL
EXISTING OVERALL PLAN & PROFILE

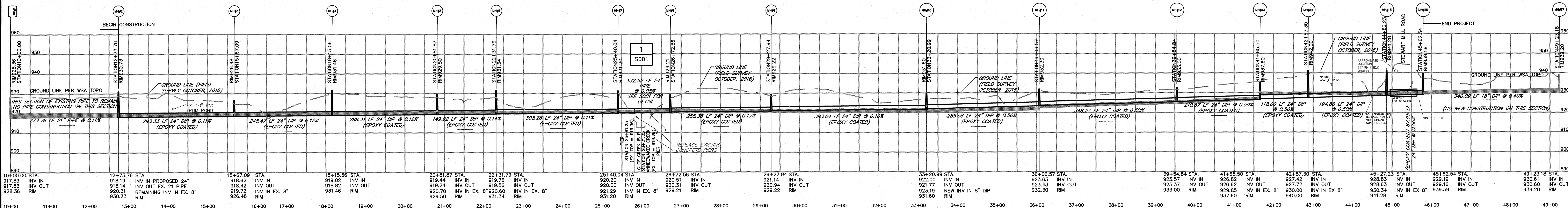
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CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C001

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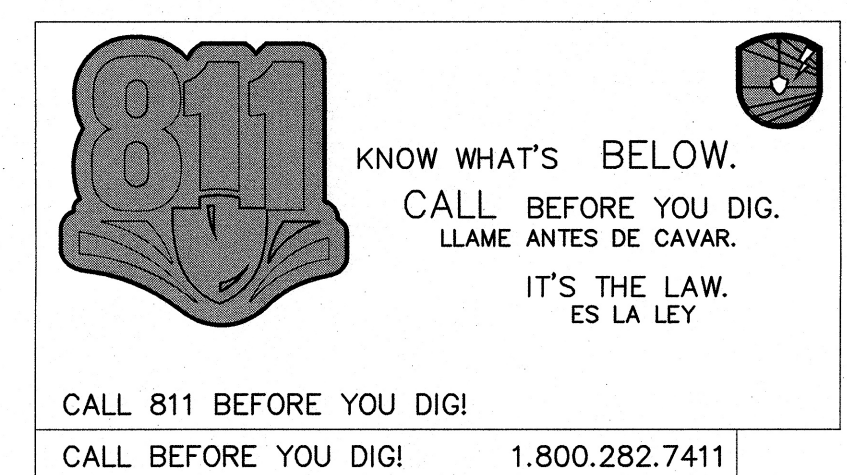
- THE SECTION OF 8" PIPE BETWEEN MH 10 AND MH 10-1-1 IS TO BE REPLACED W/8" DIP @ 1.00% (SEE SHT. C005).
- THIS SHEET IS INCLUDED TO GIVE AN OVERALL VIEW OF THE EXISTING PIPE PROFILE (SCALE: AS SHOWN GRAPHICALLY)
- CONTRACTOR SHALL PLACE STONE IN ACCORDANCE TO DETAIL 022102 AND SPECIFICATIONS TO SET PROPOSED PIPE INVERT AS REQUIRED.
- REPLACE EXISTING MANHOLES 2 THROUGH 16.



PLAN
1" = 100'



PROFILE
1" = 100' HORIZONTAL
1" = 20' VERTICAL



PROJECT ENGINEER:	D. EHRHARDT
DESIGNED BY:	B. MOSS
DRAWN BY:	J. JORDAN
CHECKED BY:	D. EHRHARDT
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
0 1/2" 1"	

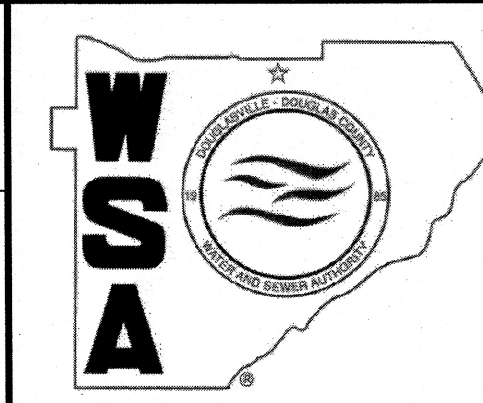
100% SUBMITTAL



Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

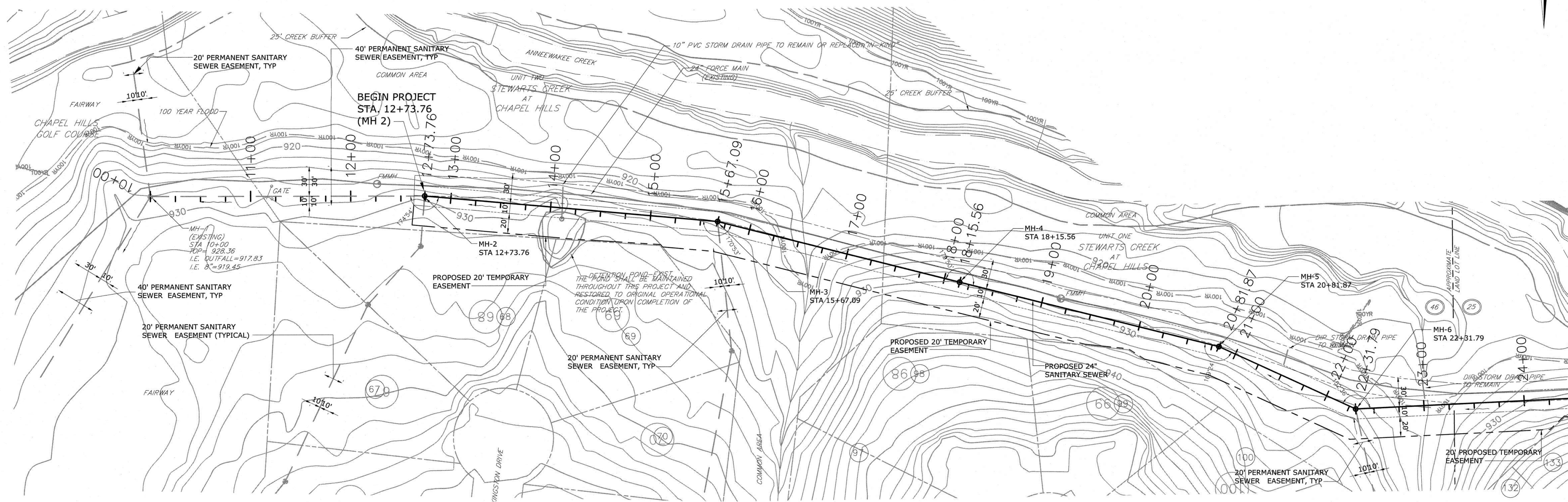
DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



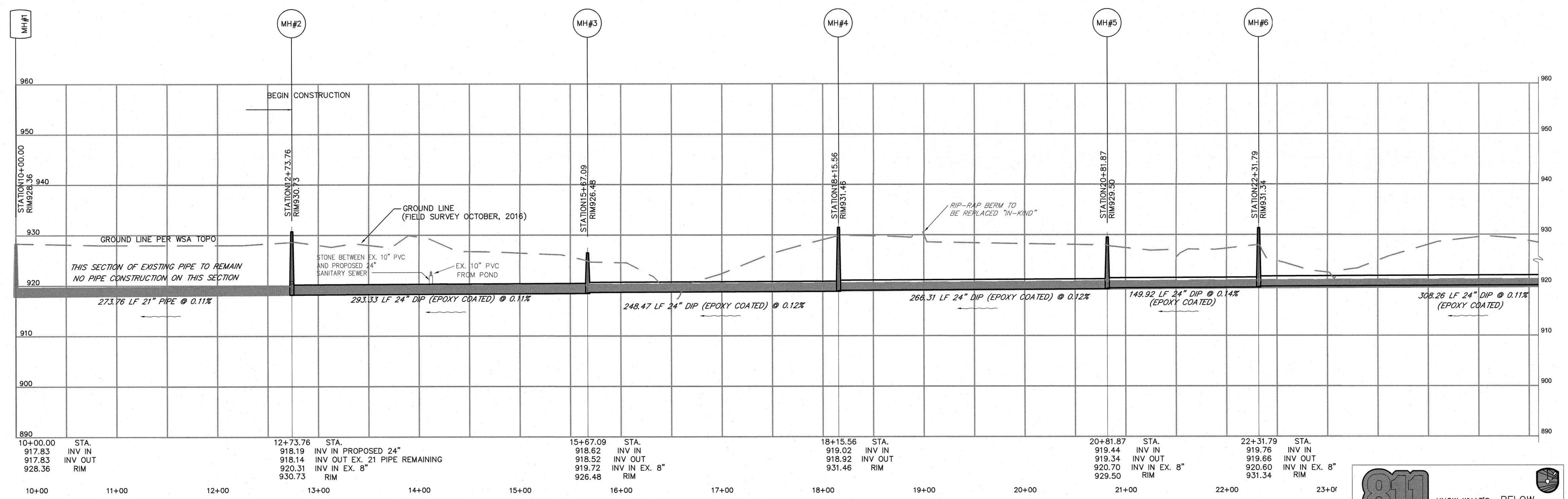
OUTFALL SEWER
CIVIL
PROPOSED OVERALL PLAN & PROFILE
AND BORING LOCATIONS

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C002



PLAN
1" = 50'

- NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE 24" FORCE MAIN THROUGHOUT THE LENGTH OF THE PROJECT AND ANY PENALTIES IMPOSED DUE TO DAMAGE TO FM BY CONTRACTOR DURING THE PROJECT.
 2. LOCATION OF EXISTING 24" FM IS BASED ON DRAWINGS FROM FILES OF DDCWSA AND FIELD LOCATE OF AIR RELIEF VALVE MANHOLES. COORDINATION SHOULD NOT RELY ON THE FM LOCATIONS INDICATED ON PLANS.
 3. CONTRACTOR SHALL ACCURATELY LOCATE AND FLAG FORCE MAIN LOCATION AT BEGINNING OF CONSTRUCTION. IF FLAGGING IS DISTURBED DURING CONSTRUCTION, CONTRACTOR SHALL IMMEDIATELY REPLACE.
 4. ALL CONSTRUCTION, INGRESS-EGRESS AND STAGING AREAS SHALL BE WITHIN EXISTING WSA EASEMENTS. PRIOR TO ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL COORDINATE ALL POINTS OF ENTRY WITH THE WSA INSPECTOR. ONCE POINTS OF ENTRY HAVE BEEN ESTABLISHED, THE CONTRACTOR SHALL STAKE ALL EASEMENTS REQUIRED TO COMPLETE THE PROJECT.
 5. PROPOSED MH TOP ELEVATIONS ARE APPROXIMATE. FINAL ADJUSTED GRADE SHALL BE DETERMINED BY BY FINISH GRADE AND TYPE SURFACE (PAVEMENT OR LANDSCAPE) OR AS DIRECTED BY THE WSA INSPECTOR.
 6. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION.
 7. CONTRACTOR SHALL PLACE STONE IN ACCORDANCE TO DETAIL 0222102 AND SPECIFICATIONS TO SET PROPOSED PIPE INVERT AS REQUIRED.
 8. REPLACE EXISTING MANHOLES 2 THROUGH 16.



PROFILE
1" = 50' HORIZONTAL
1" = 10' VERTICAL

811 KNOW WHAT'S BELOW.
CALL BEFORE YOU DIG.
LAME ANTES DE CAVAR.
IT'S THE LAW.
ES LA LEY.

CALL 811 BEFORE YOU DIG!
CALL BEFORE YOU DIG! 1.800.282.7411

FILE: C:\31247\ATLANTA\31247-010\DRAWINGS\DWG\003.dwg User: jordan Date: 5/26/19 3:52 PM
PLOT DATE: 6/26/19 3:54 AM BY: JORDAN

PROJECT ENGINEER:	D. EHRHARDT
DESIGNED BY:	B. MOSS
DRAWN BY:	J. JORDAN
CHECKED BY:	D. EHRHARDT
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

100% SUBMITTAL



Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

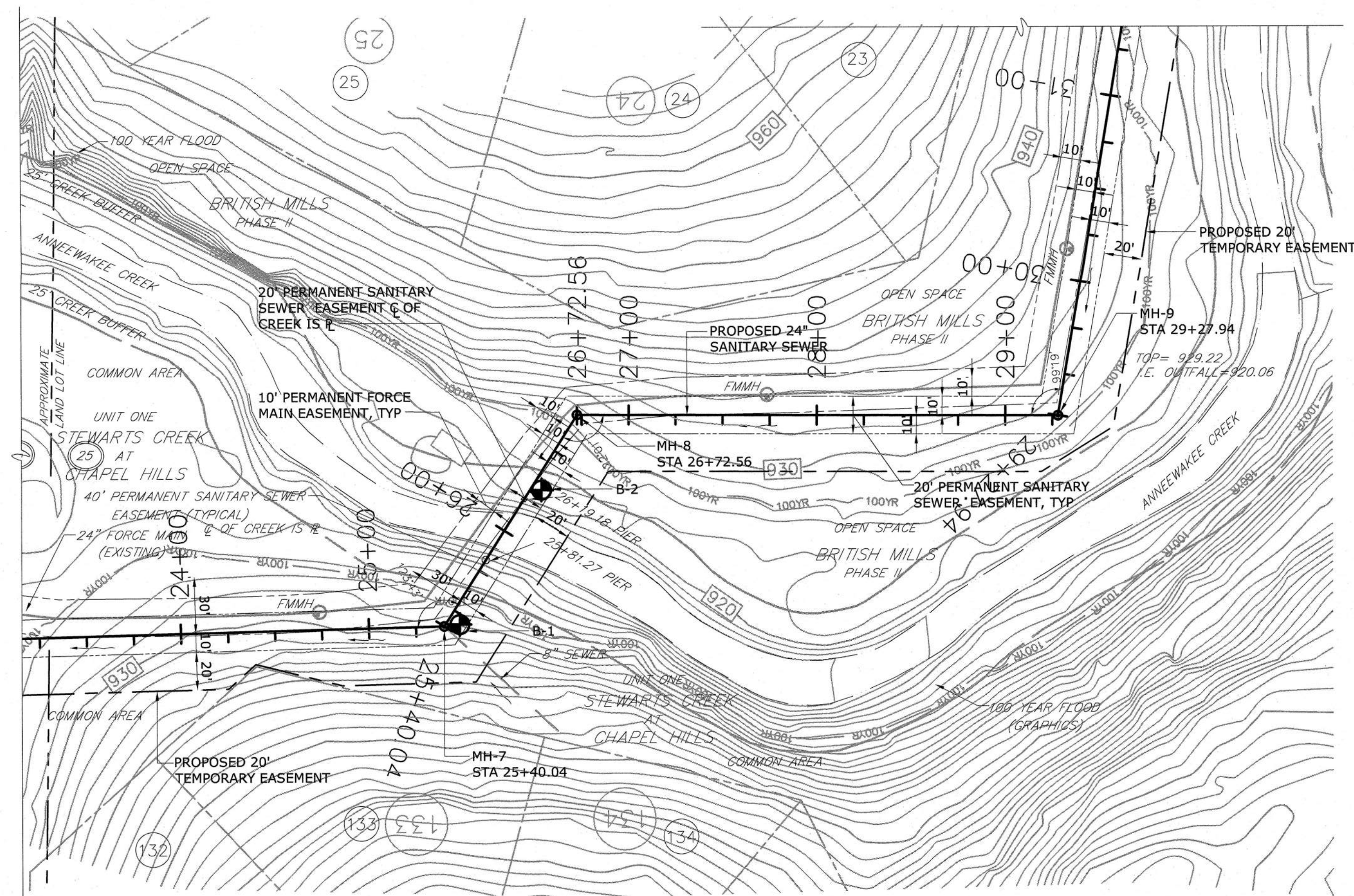
DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



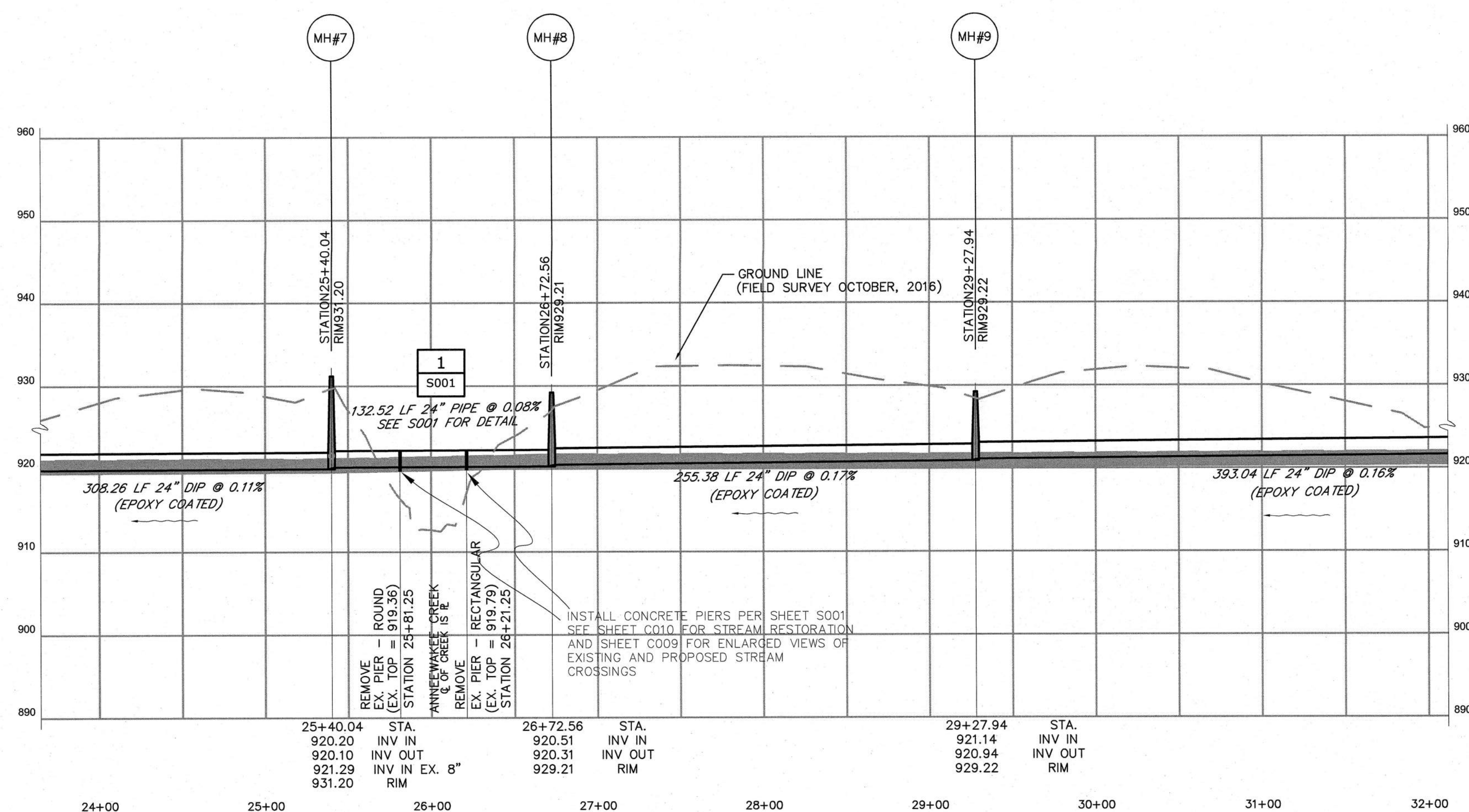
OUTFALL SEWER
CIVIL
PLAN & PROFILE STA 10+00 TO STA 24+00

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C003

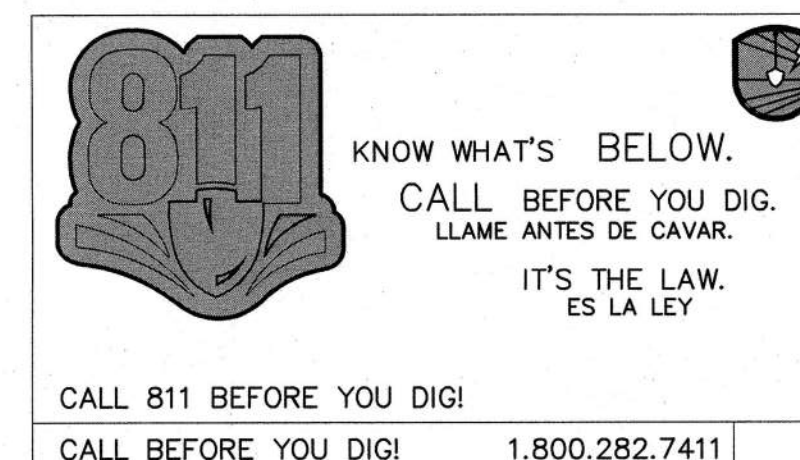




PLAN
1" = 50'

- NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE 24" FORCE MAIN THROUGHOUT THE LENGTH OF THE PROJECT AND ANY PENALTIES IMPOSED DUE TO DAMAGE TO FM BY CONTRACTOR DURING THE PROJECT.
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 5. PROPOSED MH TOP ELEVATIONS ARE APPROXIMATE. FINAL ADJUSTED GRADE SHALL BE DETERMINED BY FINISH GRADE AND TYPE SURFACE (PAVEMENT OR LANDSCAPE) OR AS DIRECTED BY THE WSA INSPECTOR.
 6. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION.
 7. CONTRACTOR SHALL PLACE STONE IN ACCORDANCE TO DETAIL 0222102 AND SPECIFICATIONS TO SET PROPOSED PIPE INVERT AS REQUIRED.
 8. REPLACE EXISTING MANHOLES 2 THROUGH 16.



PROFILE
1" = 50' HORIZONTAL
1" = 10' VERTICAL



						PROJECT ENGINEER:	D. EHRHARDT	100% SUBMITTAL	
						DESIGNED BY:	B. MOSS		
						DRAWN BY:	J. JORDAN		
						CHECKED BY:	D. EHEHARDT		
						IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE			
REV	ISSUED FOR	DATE	BY						

100% SUBMITTAL



Hazen

HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

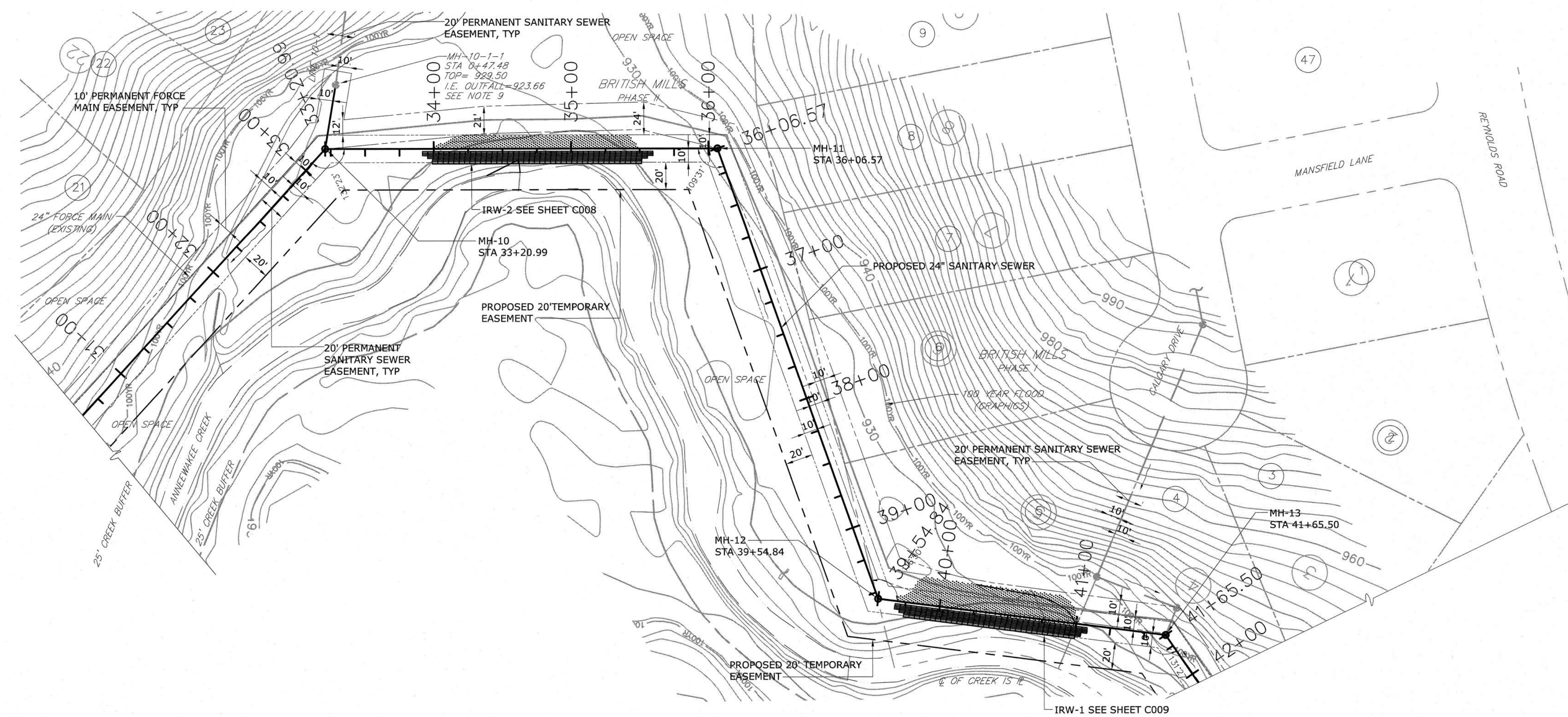
DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT

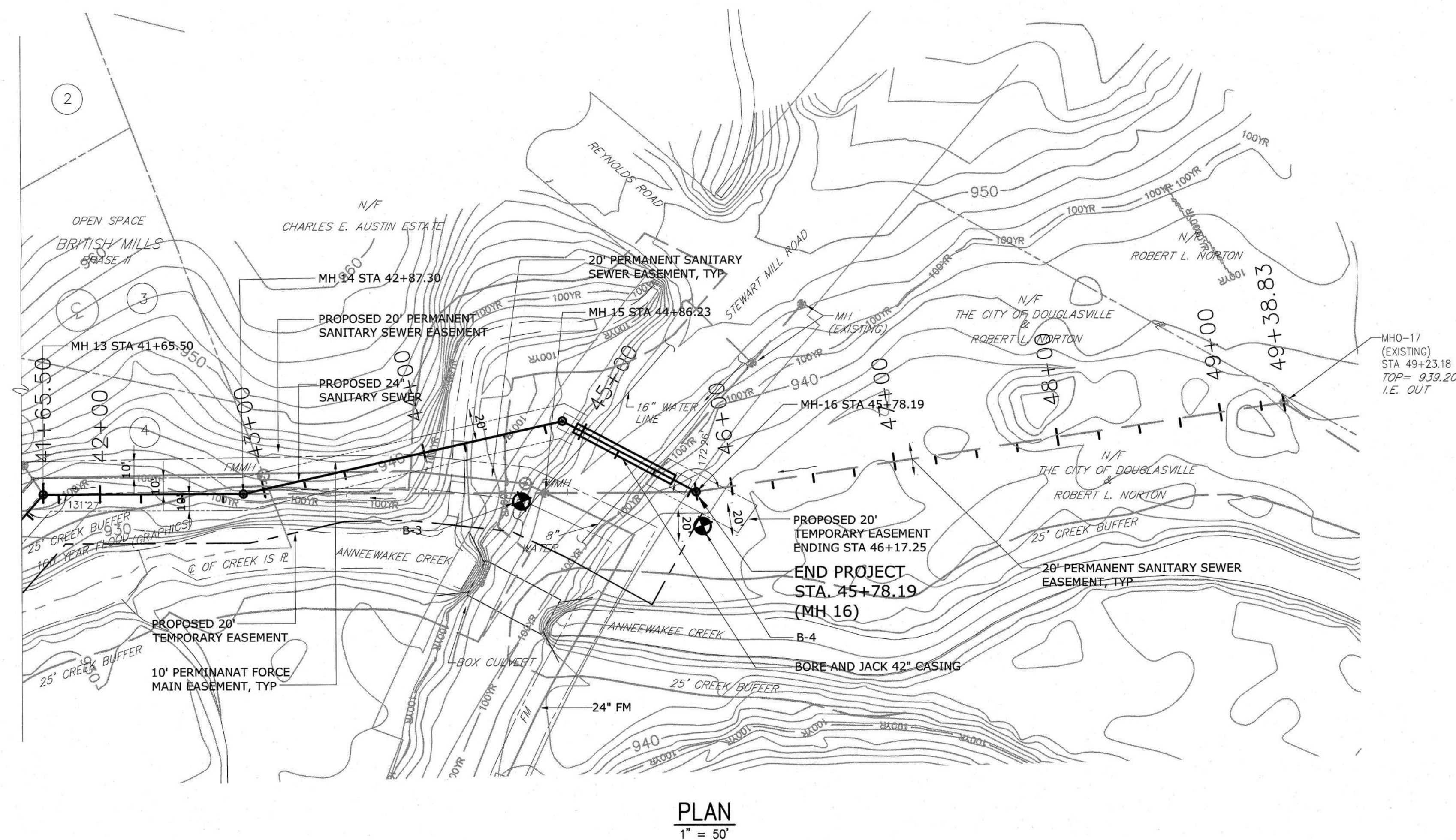


OUTFALL SEWER
CIVIL
PLAN & PROFILE STA
24+00 TO STA 31+00

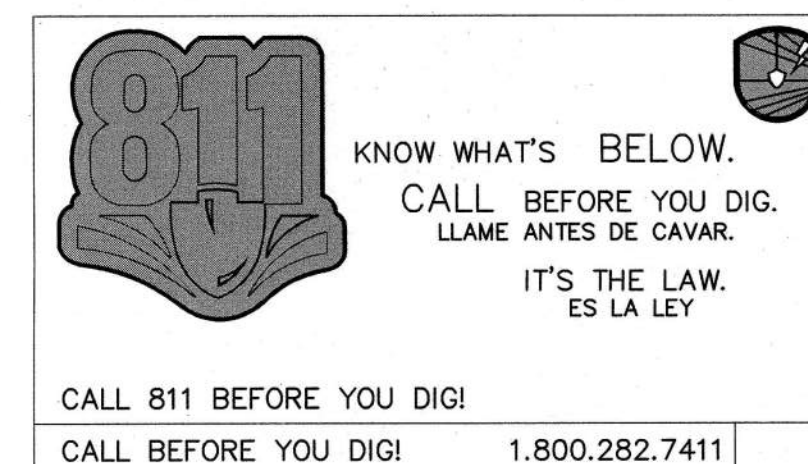
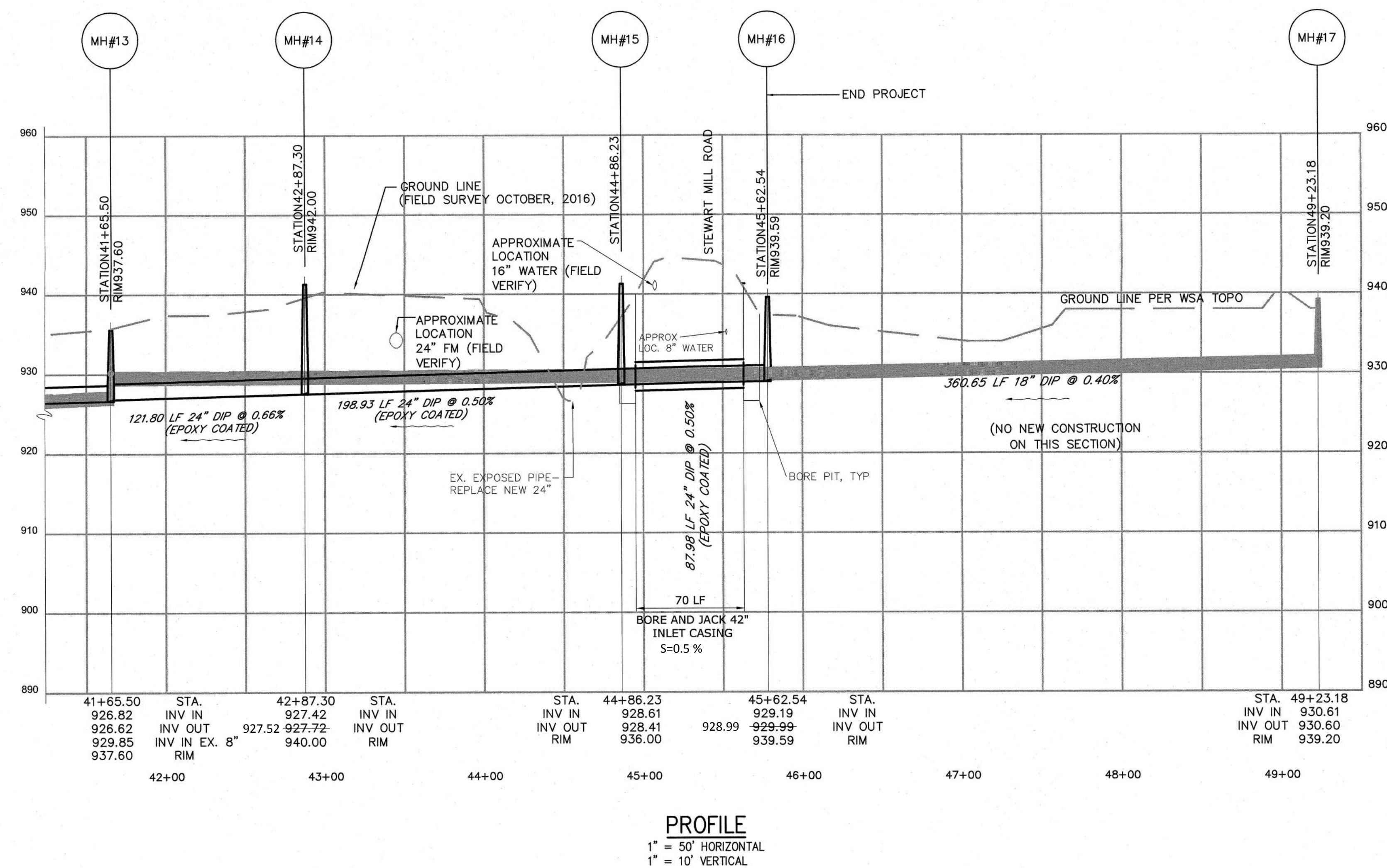
DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C004



1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE 24" FORCE MAIN THROUGHOUT THE LENGTH OF THE PROJECT AND ANY PENALTIES IMPOSED DUE TO DAMAGE TO FM BY CONTRACTOR DURING THE PROJECT.
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3. CONTRACTOR SHALL ACCURATELY LOCATE AND FLAG FORCE MAIN LOCATION AT BEGINNING OF CONSTRUCTION. IF FLAGGING IS DISTURBED DURING CONSTRUCTION, CONTRACTOR SHALL IMMEDIATELY REPLACE.
4. ALL CONSTRUCTION, INGRESS-EGRESS AND STAGING AREAS SHALL BE WITHIN EXISTING WSA EASEMENTS, PRIOR TO ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL COORDINATE WITH THE WSA. IF FOR ANY REASON A WSA INSPECTOR, ONCE POINTS OF ENTRY HAVE BEEN ESTABLISHED, THE CONTRACTOR SHALL STAKE ALL EASEMENTS REQUIRED TO COMPLETE THE PROJECT.
5. PROPOSED MH TOP ELEVATIONS ARE APPROXIMATE. FINAL ADJUSTMENTS SHALL BE DETERMINED BY FINISH GRADE AND TYPE SURFACE (PAVEMENT OR LANDSCAPE) AND AS DIRECTED BY THE WSA INSPECTOR.
6. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION.
7. CONTRACTOR SHALL PLACE STONE IN ACCORDANCE TO DETAIL 022102 AND (SPECIFICATIONS FOR SET PROPOSED PIPE INVERT AS REQUIRED).
8. REPLACE EXISTING MANHOLES 2 THROUGH 16.
9. THE SECTION OF 8" PIPE BETWEEN MH 10 AND MH 10+1-1.15 TO BE REPLACED W/8" DIP @ 1.00% (SPECIFICATIONS FOR EXISTING AND PROPOSED PROFILE)



- NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE 24" FORCE MAIN THROUGHOUT THE LENGTH OF THE PROJECT AND ANY PENALTIES IMPOSED DUE TO DAMAGE TO FM BY CONTRACTOR DURING THE PROJECT.
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 8. REPLACE EXISTING MANHOLES 2 THROUGH 16.



				PROJECT ENGINEER: D. EHRHARDT	
				DESIGNED BY: B. MOSS	
				DRAWN BY: J. JORDAN	
				CHECKED BY: D. EHRHARDT	
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
REV	ISSUED FOR	DATE	BY		

100% SUBMITTAL



Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT

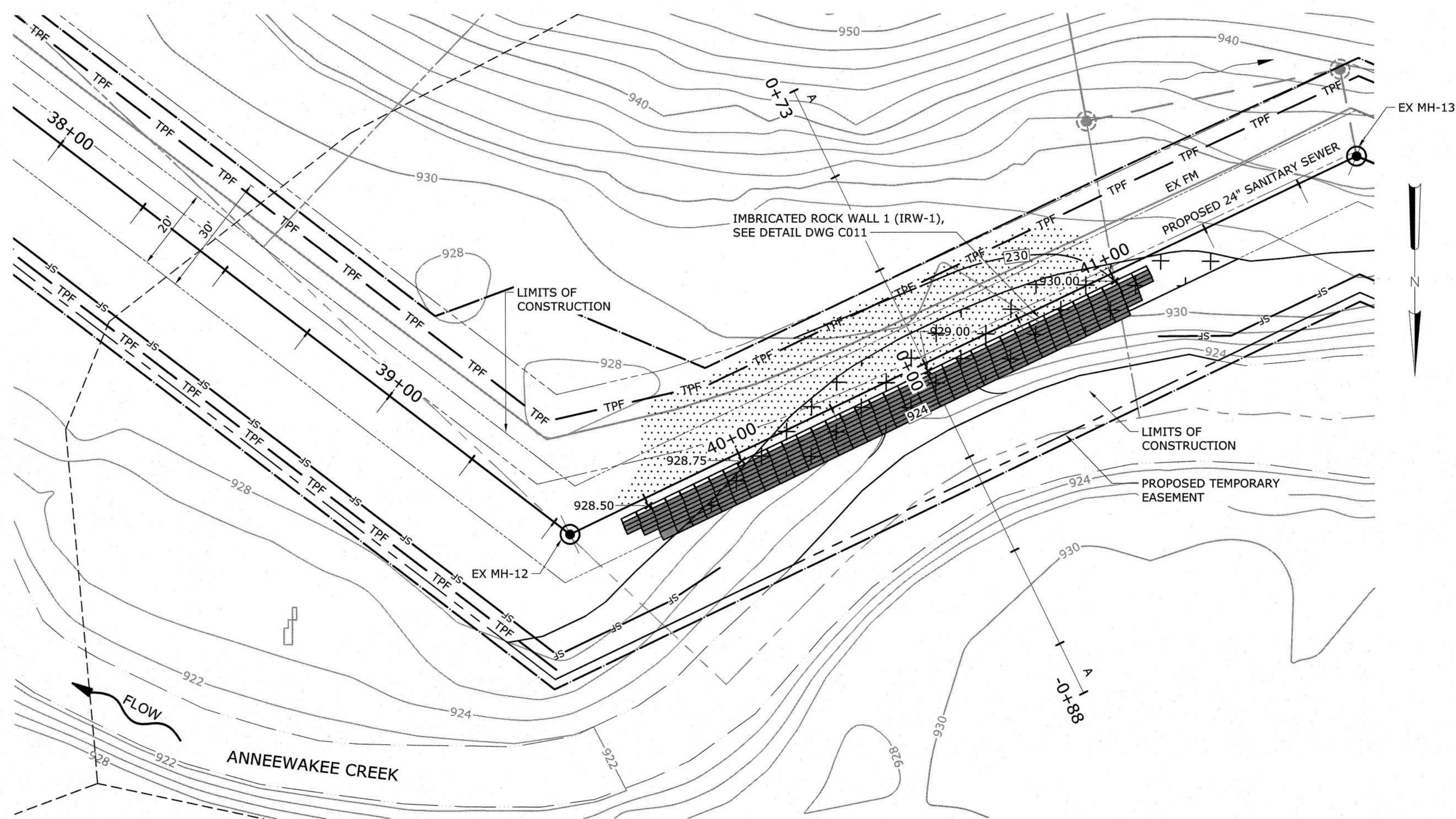


OUTFALL SEWER
CIVIL
PLAN & PROFILE STA
42+00 TO STA 49+23.18

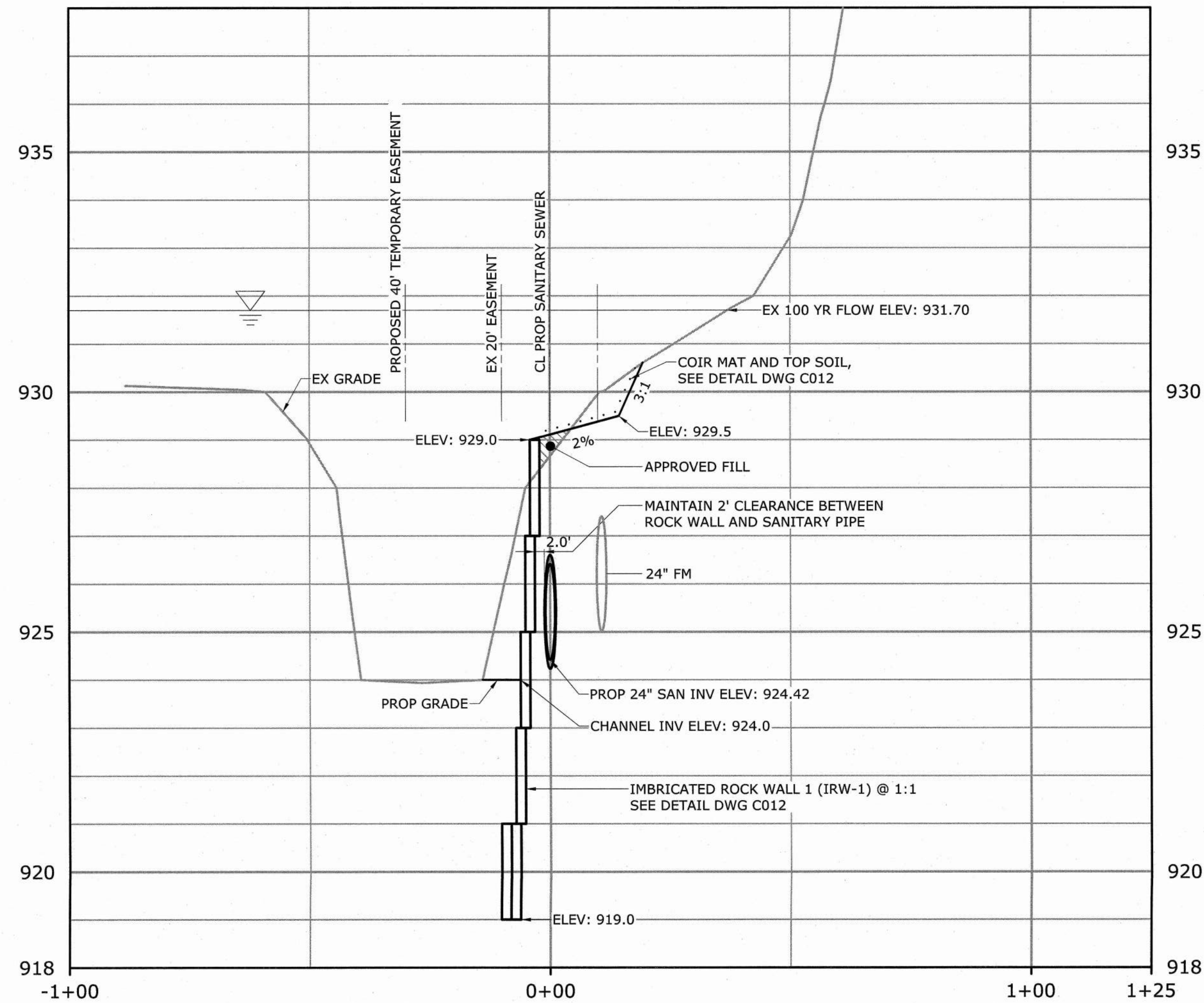
DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C006

NOTES:

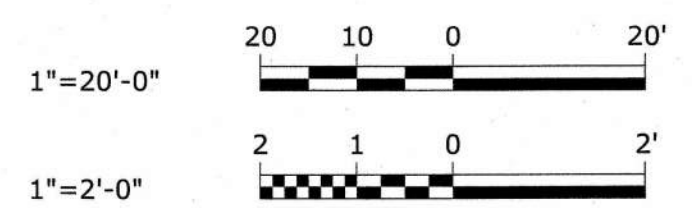
1. CONTRACTOR TO SEED COIR MAT/TOP SOIL AREAS WITH A COMBINATION OF TEMPORARY GRASS (D&2 AND STRAW, SEE SHEET C021), AND PERMANENT RIPARIAN SEED MIX. THE PERMANENT MIX IS TO BE ERNST MIX ERNMX-501 (GEORGIA BLUE RIDGE RIPARIAN MIX) OR EQUAL, 20#/AC PER MANUFACTURER'S SPECIFICATIONS. ALL REMAINING DISTURBED AREAS SHALL BE PERMANENTLY SEEDED WITH D&3 MIX PER SHEET C021.
2. STREAM DETAIL AND EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS TO SAFELY PROTECT COVER AND SLOPES ADJACENT TO IRW WORK.
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IRW-1
PLAN VIEW
1" = 20'



IRW-1
SECTION A-A
STA 40+50
LOOKING DOWNSTREAM
SECTION VIEW
HORZ: 1" = 20' - VERT: 1" = 2'



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PLOT DATE: 06/06/19 10:00 AM BY: JORDAN

REV	ISSUED FOR	DATE	BY	PROJECT ENGINEER: D. EHRHARDT
				DESIGNED BY: T. SCHUELER
				DRAWN BY: S. KANE
				CHECKED BY: D. EHRHARDT
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

100% SUBMITTAL



Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY
STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT

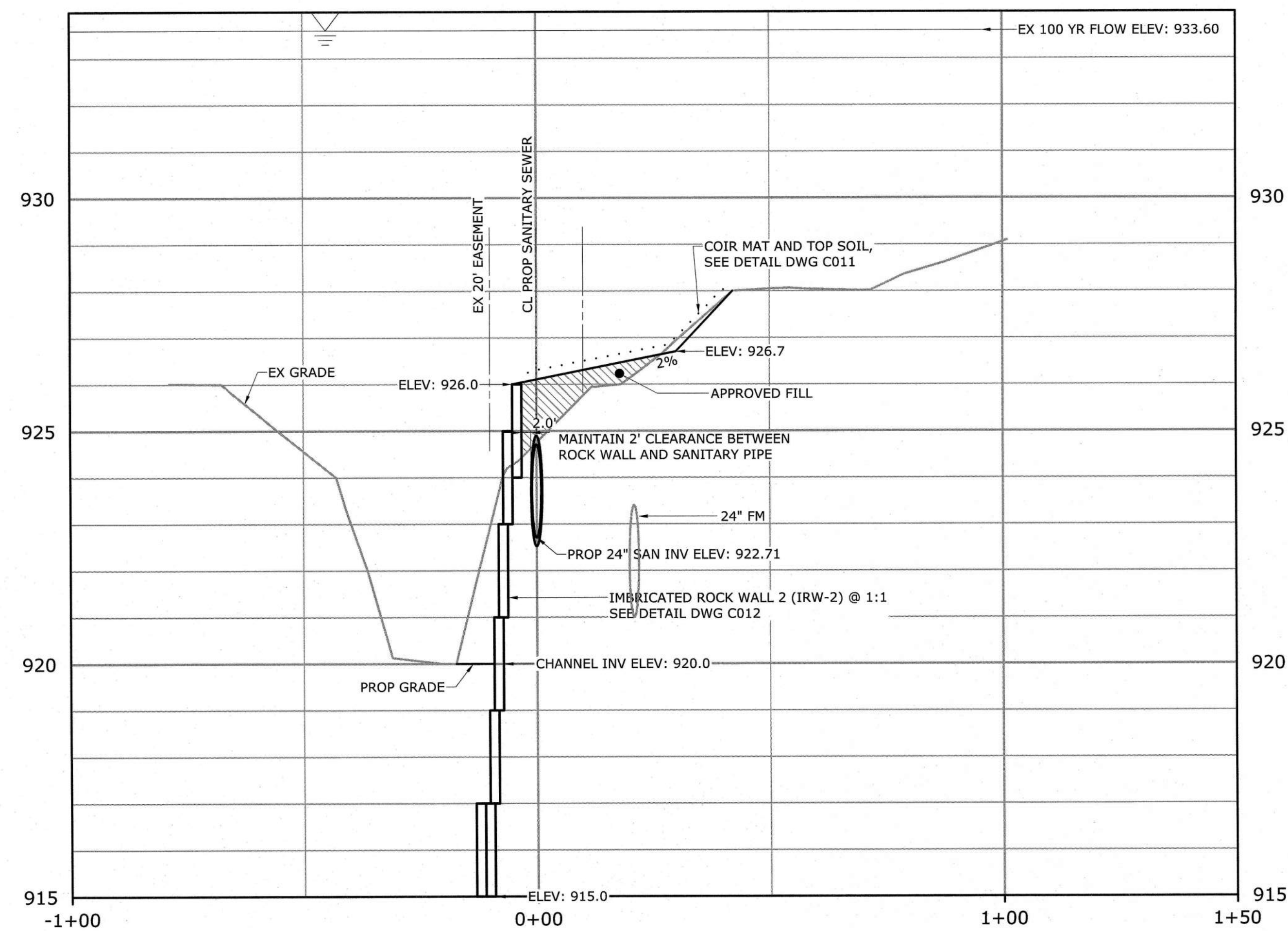
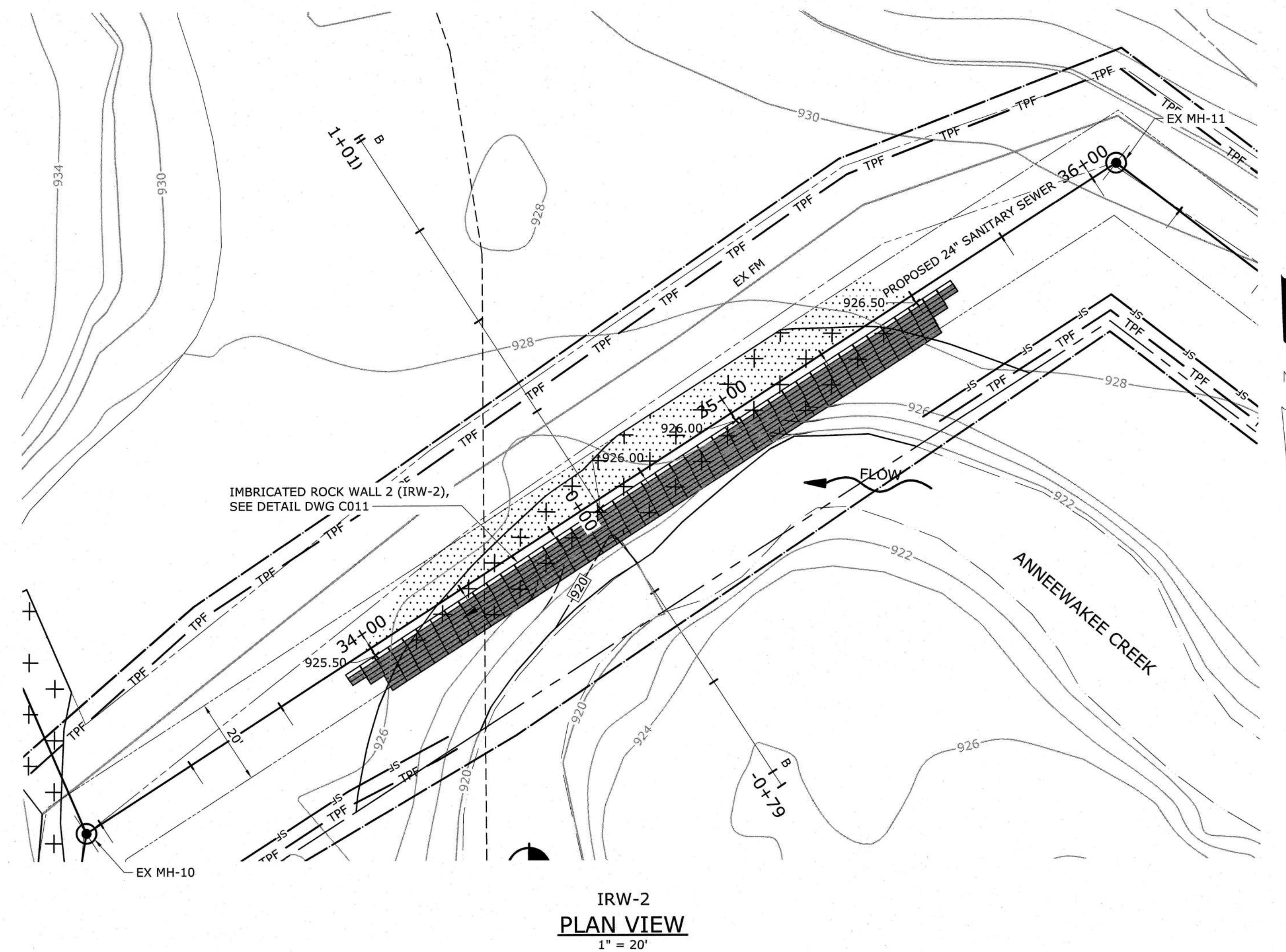


OUTFALL SEWER
CIVIL
STREAM RESTORATION DESIGN - IRW-1
PLAN & PROFILE

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C007

NOTES:

1. CONTRACTOR TO SEED COIR MAT/TOP SOIL AREAS WITH A COMBINATION OF TEMPORARY GRASS (D&2 AND STRAW, SEE SHEET C021), AND PERMANENT RIPARIAN SEED MIX. THE PERMANENT MIX IS TO BE ERNST MIX ERNMX-501 (GEORGIA BLUE RIDGE RIPARIAN MIX) OR EQUAL, 20#/AC PER MANUFACTURE'S SPECIFICATIONS. ALL REMAINING DISTURBED AREAS SHALL BE PERMANENTLY SEEDED WITH D&3 MIX PER SHEET C021.
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REV	ISSUED FOR	DATE	BY	PROJECT ENGINEER: D. EHRHARDT
				DESIGNED BY: T. SCHUELER
				DRAWN BY: S. KANE
				CHECKED BY: D. EHRHARDT
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

100% SUBMITTAL



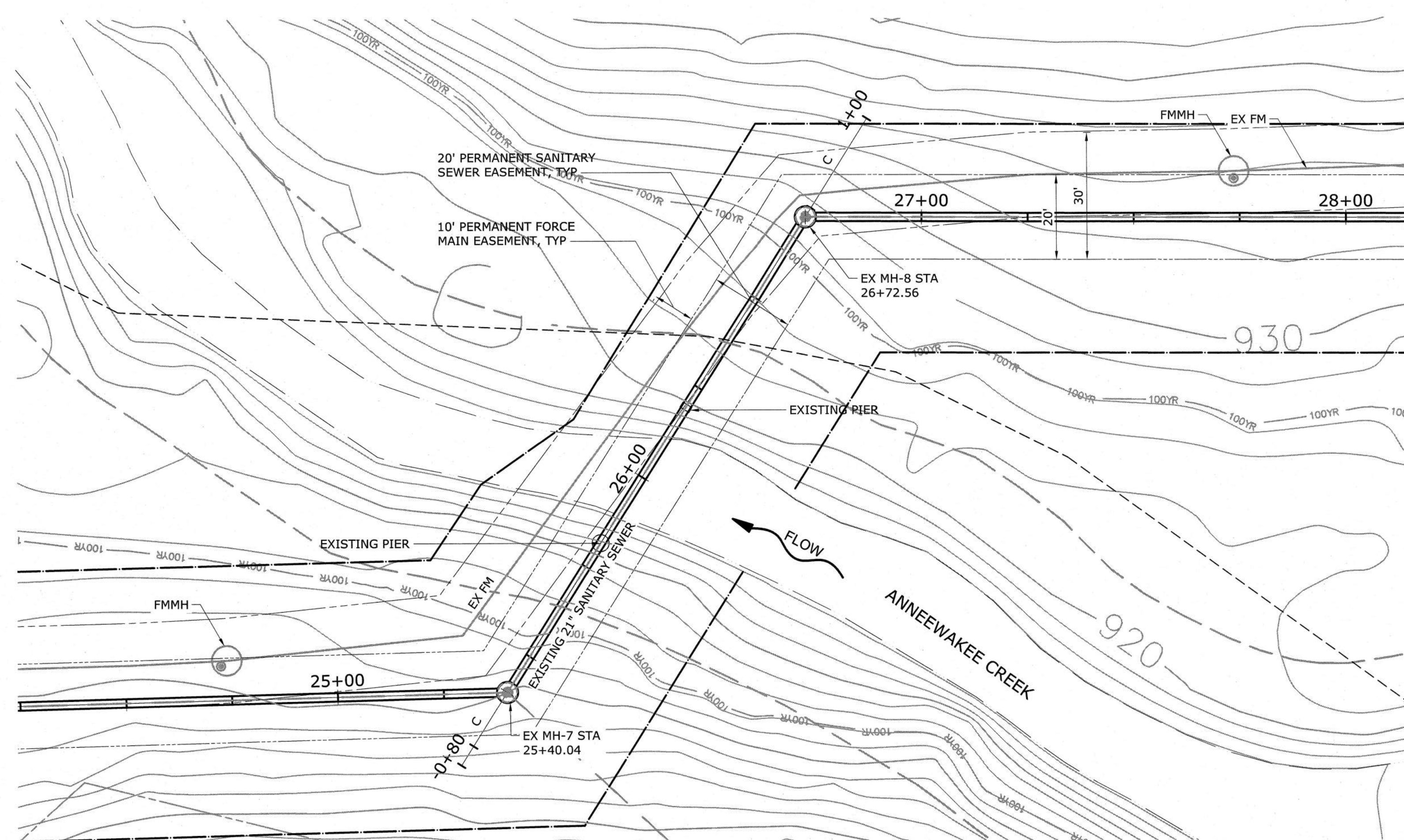
Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY
STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



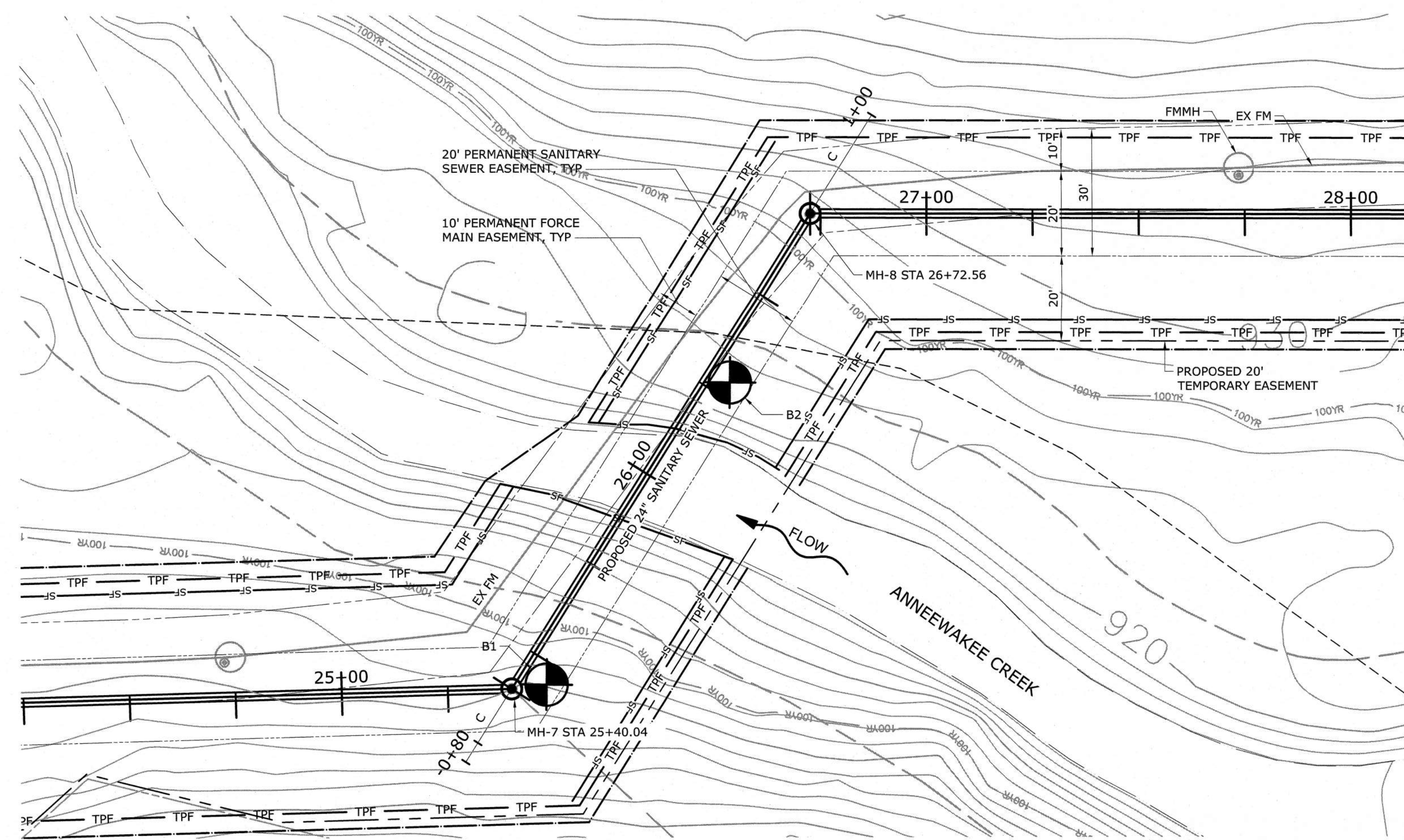
OUTFALL SEWER
CIVIL
STREAM RESTORATION DESIGN - IRW-2
PLAN & PROFILE

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C008



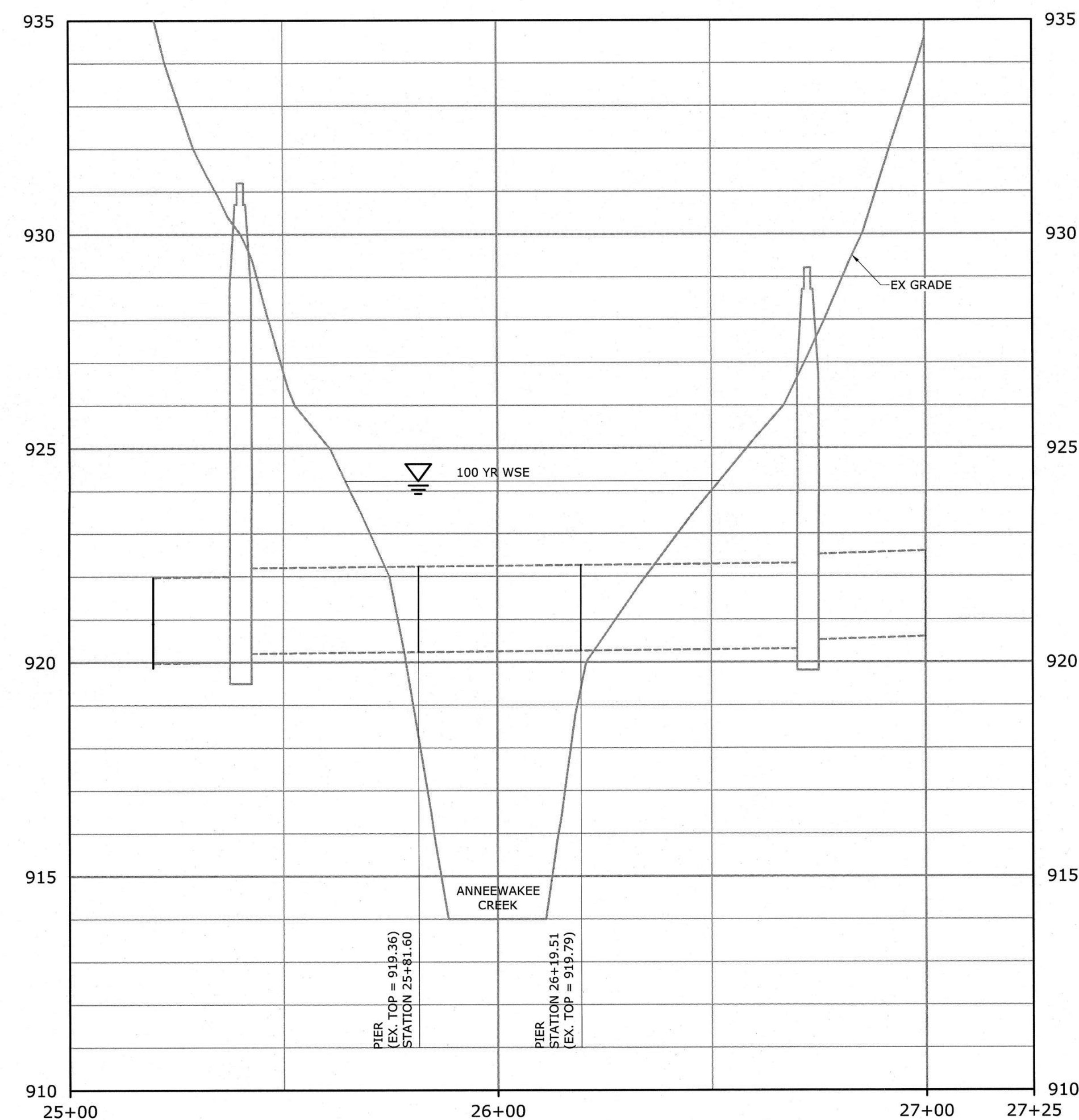
EXISTING OUTFALL SEWER

PLAN
1" = 20'



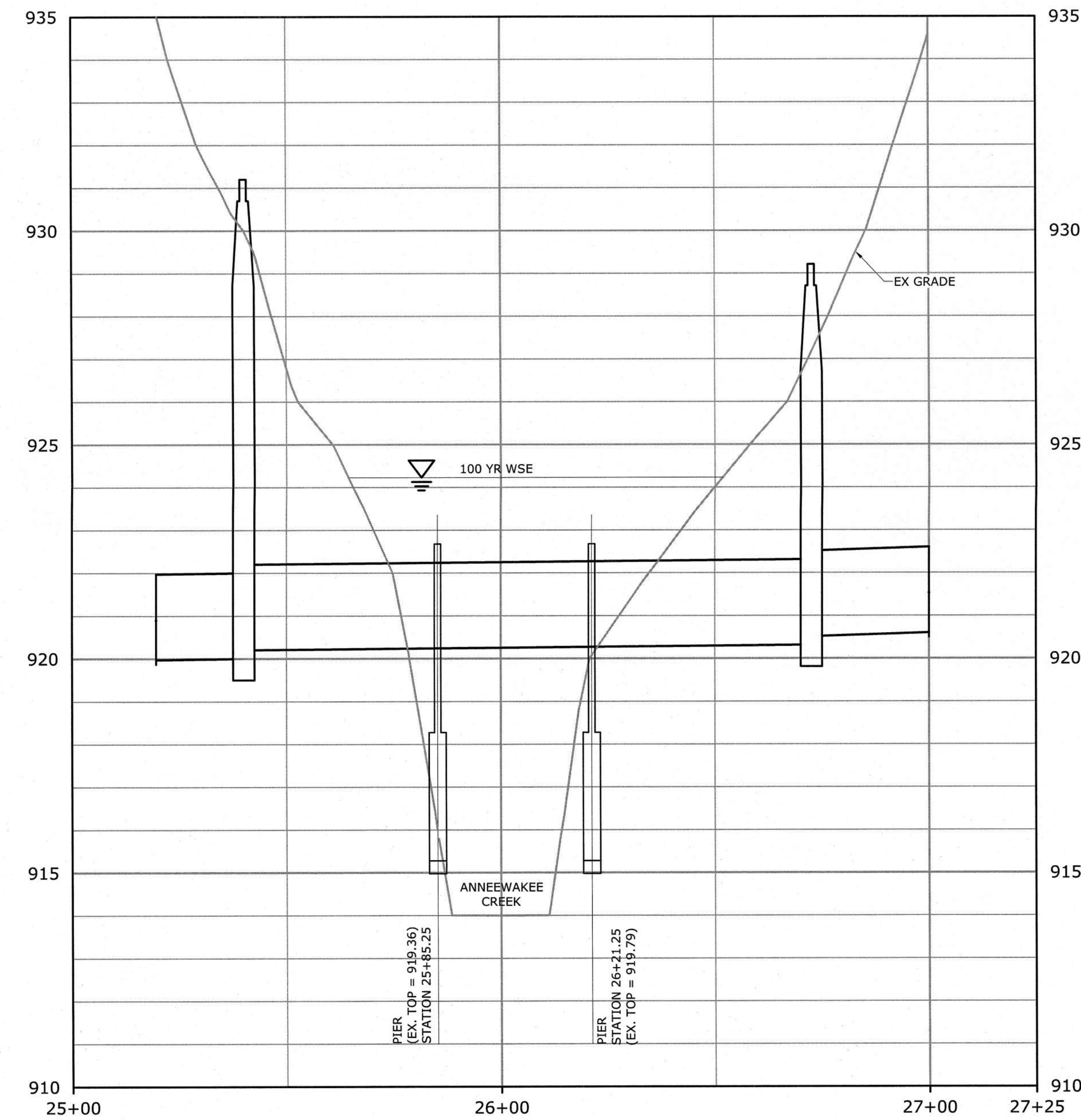
PROPOSED OUTFALL SEWER

PLAN
1" = 20'



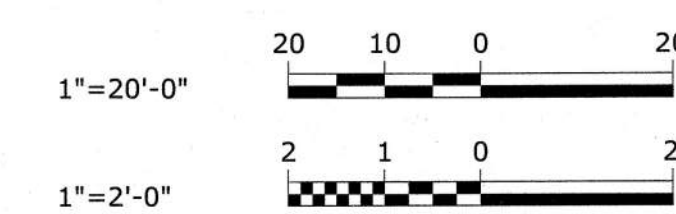
EXISTING OUTFALL SEWER
STA 25+00 TO 27+25
LOOKING DOWNSTREAM

SECTION
HORZ: 1" = 20' - VERT: 1" = 2'



PROPOSED OUTFALL SEWER
STA 25+00 TO 27+25
LOOKING DOWNSTREAM

SECTION
HORZ: 1" = 20' - VERT: 1" = 2'



FILE: C:\DATA\ATLANTA\STEWARTMILL\STEWARTMILL\DWG\0000.dwg Plot Date: 12/05/2017 11:58 AM PLOT DATE: 12/05/2017 11:58 AM BY: JORDAN

REV	ISSUED FOR	DATE	BY	PROJECT ENGINEER:	D. EHRHARDT
				DESIGNED BY:	T. SCHUELER
				DRAWN BY:	S. KANE
				CHECKED BY:	D. EHRHARDT
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



OUTFALL SEWER
CIVIL
EXISTING AND PROPOSED SANITARY
SEWER STREAM CROSSING PLAN &
SECTION

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C009



1. COCONUT EROSION CONTROL BLANKET SHALL BE "ROLANKA BIO-D 70" OR APPROVED EQUAL, ABLE TO WITHSTAND 12 FPS WATER VELOCITIES AND 4.5 PPS SHEAR STRESS. FABRIC EMBEDMENT 3.0 FT.
2. PREPARE SOIL BEFORE INSTALLING ROLL EROSION CONTROL PRODUCTS (RECP), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
3. BEGIN AT THE BOTTOM OF THE SLOPE, WORKING FROM DOWNSTREAM UP, AND ANCHOR FIBER MATTING IN A 12" DEEP INITIAL ANCHOR TRENCH, BACKFILL TRENCH AND TAMP FIRMLY.
4. OVERLAP EDGES OF ADJACENT PARALLEL ROLLS 12" AND ANCHOR AT 12' CENTERS WITH THE UPPER ROLL OVERLAPPING THE TOP OF THE LOWER ROLL.
5. WHEN FIBER MAT MUST BE SPLICED, PLACE END OVER END (E.O.E.) STYLE IN DIRECTION OF FLOW WITH 12" OVERLAP AND ANCHOR USING TWO STAGGERED ROWS OF STAKES AT 6' CENTERS. ADDITIONAL FASTENING MAY BE REQUIRED WHERE MATTING IS CUT TO INSTALL PLANTINGS.
6. LAY FIBER MAT LOOSELY AND ANCHOR SUFFICIENTLY TO MAINTAIN DIRECT CONTACT WITH THE SOIL - DO NOT STRETCH.
7. FOR SLOPES 2:1 AND STEEPER USE A MINIMUM OF (3) 18-INCH WOOD STAKES PER SQUARE YARD AND FOR SLOPES FLATTER THAN 2:1 USE A MINIMUM OF (2) 18-INCH WOOD STAKES PER SQUARE YARD. PROVIDE ADDITIONAL STAKING ALONG CHANNEL BOTTOM WHERE COIR MAT FORMS TOE OF SLOPE.
8. WOOD STAKES SHALL BE ANGLED SUCH THAT EXPOSED PORTION (2"-4") FACES UPSTREAM.
9. ANCHOR, FILL, AND COMPACT END OF FIBER MATTING IN 12"x6" TERMINAL ANCHOR TRENCH (MIRROR IMAGE OF INITIAL TRENCH).
10. ANCHORING DIMENSIONS TO BE REDUCED IN AREAS OF NATURAL RESOURCES TO BE PROTECTED.
11. EROSION CONTROL MATTING MAY BE EXTENDED UP STREAM BANK AS DIRECTED.
12. COIR MAT TO BE PLACED OVER 6" TOPSOIL, TEMPORARY SEED, PERMANENT SEED, AND STRAW MULCH.



100% SUBMITTAL

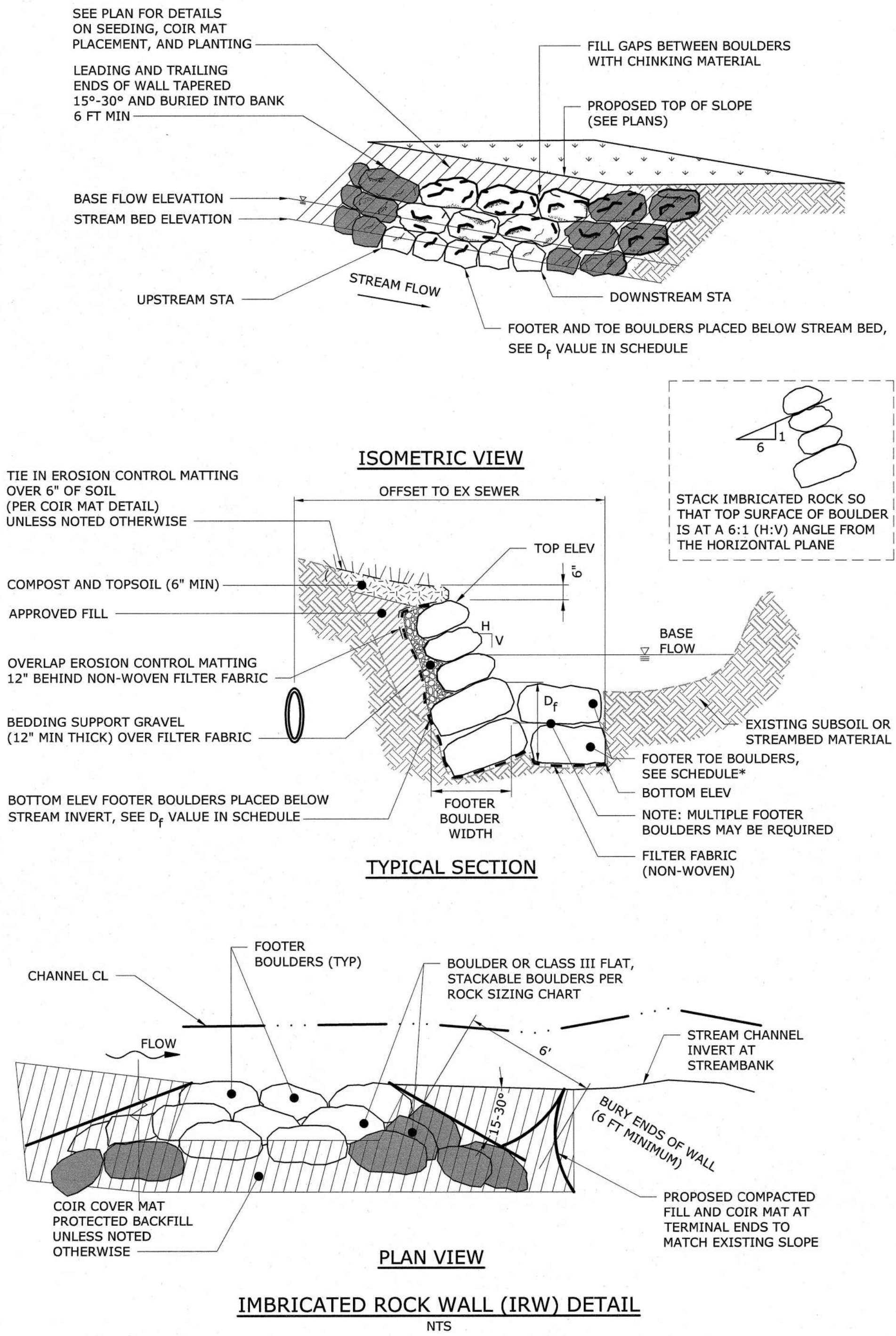
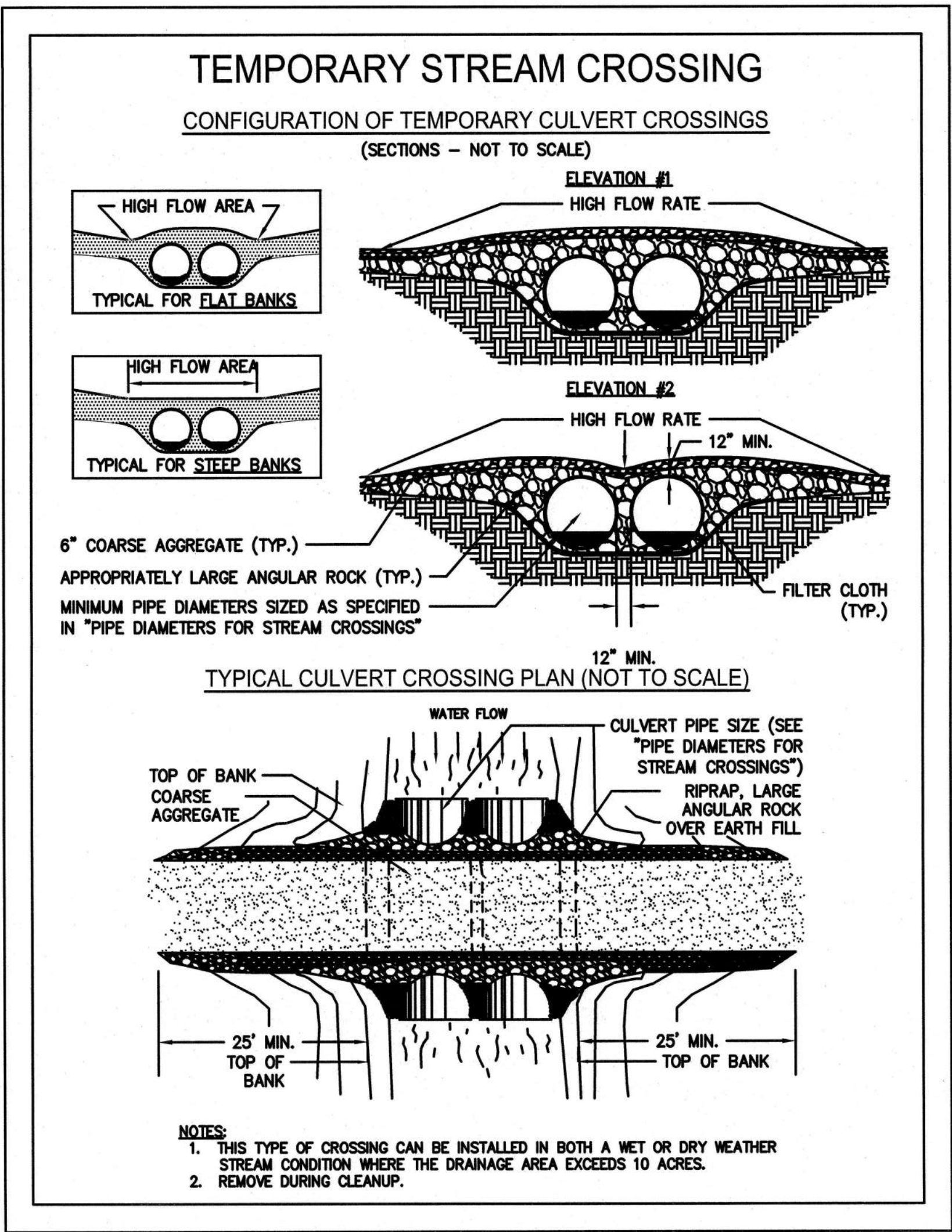


**HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GA 30342**

STEWART MILL ROAD SANITARY SEWER REPLACEMENT PROJECT



DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C010



ROCK SIZING CHART FOR STREAM REVETMENTS ON ANNEEWAKEE CREEK - DOUGLAS COUNTY, GA										
TYPE OF REVETMENT	AREA USED	SUBCOMPONENT	PURPOSE	MATERIAL	D50 (INCHES)	NSA ¹ Type	Filter Stone	NOTES	DETAIL REFERENCE	GRADING TOLERANCE
IMBRICATED RIPRAP WALL (IRW)	MS	WALL STONE	BANK PROTECTION	BOULDERS	24	R- 7+	FS- 3	FLAT, STACKABLE	SEE IRW DETAIL	1.0' +/- HOR; 0.2' +/- VERT
		FOOTER ROCK	GRADE CONTROL	BOULDERS	30	R- 7+	FS- 3	FLAT, STACKABLE		
		BEDDING SUPPORT	GRADE CONTROL	STONE	NA			FS- 3 (2.5 inch stone)		
		CHINKING STONE	BANK PROTECTION	RIP RAP	6	R- 4			NA	
¹ NATIONAL STONE ASSOCIATION										

NOTE: D50 DIMENSION SHALL BE THE INTERMEDIATE AXIS (NOT THE SMALLEST AXIS)

IMBRICATED ROCK WALL (IRW) SCHEDULE										
STRUCT #	REACH	STATION ¹	OFFSET TO FOOTER TOE ² (FT)	TOP WALL ELEV (MSL)	BOT. WALL ELEV ² (MSL)	APPROX WALL HEIGHT (FT)	LENGTH, L (FT)	WALL SLOPE	D ₅₀ (FT)	NOTES
IRW-1	ANNEEWAKEE CREEK BETWEEN SANITARY MH12 AND MH13	41+00	11	930.00	920.00	10	125	1:1	5.0	SEE SECTION A-A ON PLANS AND PROFILE SHEET
		40+50	11	929.00	919.00	10				
		40+00	11	928.75	918.75	10				
		39+75	11	928.50	918.50	10				
IRW-2	ANNEEWAKEE CREEK BETWEEN SANITARY MH10 AND MH11	35+50	11	926.50	915.50	11	150	1:1	5.0	SEE SECTION B-B ON PLANS AND PROFILE SHEET
		35+00	11	926.00	915.00	11				
		34+62	11	926.00	915.00	11				
		34+00	11	925.50	914.50	11				
¹ STATIONING AND OFFSETS ARE RELATIVE TO SANITARY SEWER										
² VALUE BASED ON LOWEST LEVEL OF FOOTER STONE										

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	D. EHRHARDT
DESIGNED BY:	T. SCHUELER
DRAWN BY:	S. KANE
CHECKED BY:	D. EHRHARDT
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

100% SUBMITTAL

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



OUTFALL SEWER
CIVIL
STREAM RESTORATION
DETAILS FOR IRW-1 & 2

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C011

SECONDARY PERMITTEES

NOTE: THIS MASTER LIST TO BE COMPLETED AND SIGNED AND KEPT IN THE "ON-SITE" CONSTRUCTION TRAILER.

SECONDARY PERMITTEES SIGN WHEN RECEIVING PLANS. ALL SECONDARY PERMITTEES MUST SUBMIT SECONDARY NOI AT LEAST 14 DAYS PRIOR TO BEGINNING CONSTRUCTION ACTIVITY.

NAME COMPANY ADDRESS GSWCC LEVEL 1A CERTIFICATION NO. _____	PHONE FAX SIGNATURE _____
NAME COMPANY ADDRESS GSWCC LEVEL 1A CERTIFICATION NO. _____	PHONE FAX SIGNATURE _____
NAME COMPANY ADDRESS GSWCC LEVEL 1A CERTIFICATION NO. _____	PHONE FAX SIGNATURE _____
NAME COMPANY ADDRESS GSWCC LEVEL 1A CERTIFICATION NO. _____	PHONE FAX SIGNATURE _____

DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

DATE OF INSPECTION _____

I CERTIFY THE SITE WAS IN COMPLIANCE WITH THE ES&PC PLAN ON THE DATE OF INSPECTION.

GSWCC LEVEL II DESIGN PROFESSIONAL NAME, SIGNATURE, AND CERTIFICATION # _____

INSPECTION REVEALED THE FOLLOWING DISCREPANCIES FROM THE ES&PC PLAN.

THESE DEFICIENCIES MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

DESIGN PROFESSIONAL'S CERTIFICATION

- (1) I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORMWATER OUTFALLS, AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR100002.
- (2) I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION.
- (3) I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED, BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.
- (4) I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF: (A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO. GAR 100002, THAT THE INCREASE IN THE TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER.

Alan E. Bowling *Alan E. Bowling* #432
GSWCC LEVEL I CERTIFIED PERSONNEL NAME, SIGNATURE, AND CERTIFICATION # _____

PRIMARY PERMITTEE CERTIFICATION

- (1) I CERTIFY THAT THE RECEIVING WATER(S) OR THE OUTFALL(S) OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALLS) SHALL BE MONITORED IN ACCORDANCE WITH THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
- (2) I CERTIFY THAT THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN HAS BEEN PREPARED IN ACCORDANCE WITH PART IV OF THE GENERAL NPDES PERMIT GAR100002. THE PLAN SHALL BE IMPLEMENTED, AND THAT SUCH PLAN SHALL PROVIDE FOR COMPLIANCE WITH THIS PERMIT.
- (3) I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.
- (4) I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORMWATER OUTFALLS, AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR100002.
- (5) I CERTIFY THAT THE APPLICABLE PORTIONS OF THE EROSION CONTROL PLANS SHALL BE PROVIDED TO EACH SECONDARY PERMITTEE PRIOR TO THE SECONDARY PERMITTEE CONDUCTING ANY CONSTRUCTION ACTIVITY.
- (6) THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN, OR AN ALTERNATIVE DESIGN PROFESSIONAL APPROVED BY EPD IN WRITING, TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN (7) DAYS AFTER INSTALLATION. ALTERNATIVELY, FOR LINEAR INFRASTRUCTURE PROJECTS, THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN, OR ALTERNATIVE DESIGN PROFESSIONAL APPROVED BY EPD IN WRITING, TO INSPECT (A) THE INSTALLATION OF THE SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs FOR THE "INITIAL SEGMENT" OF THE LINEAR INFRASTRUCTURE PROJECT AND (B) ALL SEDIMENT BASINS WITHIN THE ENTIRE LINEAR INFRASTRUCTURE PROJECT WITHIN (7) DAYS AFTER THE INSTALLATION. FOR THE PURPOSES OF THE SPECIFIC REQUIREMENTS IN PART IV.A.5, THE DISTURBED ACREAGE OF THE "INITIAL SEGMENT" OF A LINEAR INFRASTRUCTURE PROJECT MUST BE EQUAL TO OR GREATER THAN 10% OF THE TOTAL ESTIMATED DISTURBED ACREAGE FOR THE LINEAR INFRASTRUCTURE PROJECT BUT NOT LESS THAN ONE(1) ACRE. THE DESIGN PROFESSIONAL SHALL DETERMINE IF THESE BMPs HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PRIMARY PERMITTEE WITHIN (7) DAYS AND THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED.

GSWCC LEVEL I CERTIFIED PERSONNEL NAME, SIGNATURE, AND CERTIFICATION # _____

REQUIRED NOTES

1. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
2. AMENDMENTS / REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
- 2.1. THE PRIMARY, SECONDARY OR TERTIARY PERMITTEES, AS APPLICABLE, SHALL AMEND THEIR PLANS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT.
- 2.2. ALL REVISIONS OR AMENDMENTS SHALL BE SUBMITTED TO THE LOCAL ISSUING AUTHORITY FOR REVIEW.
3. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- 3.1. INCLUDING BUT NOT LIMITED TO WASTE BUILDING MATERIALS, CONSTRUCTION AND DEMOLITION DEBRIS, CONCRETE WASHOUT OR EXCAVATED SEDIMENT
4. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
5. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
6. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

NON-STORMWATER DISCHARGES

ALL NON-STORMWATER DISCHARGES SHALL BE ROUTED THROUGH ONSITE BMPs AND THE STORMWATER MANAGEMENT SYSTEM WHERE POSSIBLE. THESE DISCHARGES INCLUDE FLUSHING OF WATER AND FIRE LINES, IRRIGATION WATER, GROUNDWATER, DETERGENT OF PITS OR DEPRESSIONS WITHIN THE CONSTRUCTION SITE, AND RINSE-OFF WATER CONTAINING NON-TOXIC MATERIALS.

WASTE MATERIALS

ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURELY-LIDDED METAL DUMPSTER. THE DUMPSTER SHALL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER SHALL BE EMPTIED A MINIMUM OF ONCE PER WEEK OR MORE OFTEN IF NECESSARY, AND TRASH SHALL BE HAULED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE SHALL BE BURIED ONSITE.

HAZARDOUS WASTES

ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. THE CONTRACTOR'S SUPERINTENDENT, WHO SHALL ALSO BE RESPONSIBLE FOR ENSURING THAT THESE PRACTICES ARE FOLLOWED, SHALL INSTRUCT SITE PERSONNEL IN THESE PRACTICES. MATERIAL SAFETY DATA SHEETS (MSDS'S) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ONSITE SHALL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. A MSDS SHALL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED AND/OR USED, AND ANOTHER COPY OF EACH MSDS SHALL BE MAINTAINED IN THE ES&PC PLAN FILE AT THE ONSITE CONSTRUCTION TRAILER OFFICE. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES SHALL BE INSTRUCTED ON THE USE OF MSDS SHEETS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.

THE CONTRACTOR SHALL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITHIN THIS ES&PC PLAN AND SHALL TRAIN ALL PERSONNEL IN THE PROPER CLEANUP AND HANDLING OF SPILLED MATERIALS. NO SPILLED HAZARDOUS MATERIAL OR HAZARDOUS WASTES SHALL BE ALLOWED TO COME IN CONTACT WITH STORMWATER DISCHARGES. IF SUCH CONTACT OCCURS, THE STORMWATER DISCHARGES SHALL BE CONTAINED ONSITE UNTIL APPROPRIATE MEASURES IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORMWATER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR'S SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.

SANITARY WASTES

A MINIMUM OF ONE (1) PORTABLE SANITARY UNIT SHALL BE PROVIDED FOR EVERY TEN (10) WORKERS ONSITE. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNIT(S) A MINIMUM OF ONE (1) TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.

ALL SANITARY WASTE UNITS SHALL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORMWATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY-DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, IF NECESSARY TO PREVENT WASTES FROM CONTRIBUTING TO STORMWATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, DRAWING NUMBERS C7 THROUGH C9, BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED.

SANITARY SEWER SHALL BE PROVIDED BY MUNICIPAL AUTHORITY AT THE COMPLETION OF THE PROJECT.

OFFSITE VEHICLE TRACKING

STABILIZED CONSTRUCTION EXITS HAVE BEEN PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENT. SEE DRAWING NUMBER C015 FOR CONSTRUCTION EXIT LOCATIONS AND DRAWING NUMBER C021 FOR CONSTRUCTION EXIT DETAIL. THE PAVED STREETS ADJACENT TO EACH CONSTRUCTION EXIT SHALL BE INSPECTED DAILY FOR TRACKING OF MUD, DIRT, OR ROCKS. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE SHALL BE COVERED WITH A TARPULIN.

NPDES APPENDIX NOTES

1. ITEM H: MAXIMUM IMPERVIOUS AREA
- a. TOTAL AREA: 3.60 ACRES
- b. MAXIMUM IMPERVIOUS AREA: 50% OF TOTAL PLANNED SITE
- c. MAXIMUM IMPERVIOUS AREA: 3.6 ACRES X 50% = 1.8 ACRES
- d. IMPERVIOUS AREA: <0.1 ACRES
- e. IMPERVIOUS AREA: <15% (EST. 3%)
2. ITEM H: TOTAL DISTURBANCE AREA AT ANY ONE TIME:
- a. TOTAL AREA: 3.60 ACRES
- b. MAX DISTURBED AREA AT ANY ONE TIME: 25 ACRES OR 50% OR TOTAL PLANNED SITE (50% X 3.6 ACRES = 1.8 ACRES)
- c. MAX DISTURBED AREA AT ANY ONE TIME: 1.8 ACRES
- d. TOTAL DISTURBED AREA: 2.16 ACRES
- e. SITE TO BE STABILIZED AS PORTIONS OF PROJECT ARE COMPLETED. NO MORE THAN 1.8 ACRES DISTURBED AREA AT ONE TIME.
3. ITEM Q: INSPECTIONS
- a. CERTIFIED PERSONNEL FOR PRIMARY PERMITTEES SHALL CONDUCT INSPECTIONS AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH SECTION IV.D.4.A.(3)(A) - (C) OF THIS PERMIT.
4. ITEM T: TOTAL PLANNED SITE DISTURBANCE:
- a. TOTAL AREA: 3.60 ACRES
- b. IMPERVIOUS AREA: <0.1 ACRES
- c. IMPERVIOUS AREA: <15% (EST. 3%)

INVENTORY FOR POLLUTION PREVENTION PLAN

THE FOLLOWING MATERIALS ARE EXPECTED TO BE ONSITE DURING CONSTRUCTION: CONCRETE PRODUCTS, ASPHALT, PETROLEUM-BASED FUELS AND LUBRICANTS FOR EQUIPMENT, TAR, METAL BUILDING MATERIALS, LUMBER, SHEET ROCK, FLOOR COVERINGS, ELECTRICAL WIRE AND FIXTURES, PAINTS/STAINS/COATINGS/FINISHING TREATMENTS, PAINT/CLEANING SOLVENTS, ADDITIVES FOR SOIL STABILIZATION, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, PLASTIC PIPES, AND METAL PIPES.

SPILL PREVENTION

PRACTICES SUCH AS GOOD HOUSEKEEPING, PROPER HANDLING OF HAZARDOUS PRODUCTS, AND PROPER SPILL CONTROL PRACTICES SHALL BE FOLLOWED TO REDUCE THE RISK OF SPILLS AND THEIR SUBSEQUENT DISCHARGE INTO STORMWATER RUNOFF.

GOOD HOUSEKEEPING

1. QUANTITIES OF PRODUCTS STORED ONSITE SHALL BE LIMITED TO THE AMOUNT NEEDED FOR THE PROJECT.
2. PRODUCTS AND MATERIALS SHALL BE STORED IN A NEAT, ORDERLY MANNER IN APPROPRIATE CONTAINERS PROTECTED FROM RAINFALL, WHERE POSSIBLE.
3. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH MANUFACTURER'S LABELS LEGIBLE AND VISIBLE.
4. PRODUCT MIXING, DISPOSAL, AND DISPOSAL OF PRODUCT CONTAINERS SHALL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
5. THE CONTRACTOR SHALL INSPECT SUCH MATERIALS TO ENSURE PROPER USE, STORAGE, AND DISPOSAL.

PRODUCT SPECIFIC PRACTICES

PETROLEUM-BASED PRODUCTS: CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS SHALL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES DAILY INSPECTIONS OF ONSITE VEHICLES/MACHINERY AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS SHALL BE LOCATED AWAY FROM STATE WATERS, NATURAL DRAINS, AND STORMWATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS, AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS SHALL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

PAINTS/FINISHES/SOLVENTS/ETC.: ALL PRODUCTS SHALL BE STORED IN TIGHTLY-SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT SHALL NOT BE DISCHARGED INTO THE STORMWATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS, AND PRODUCT CONTAINERS SHALL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING: NO CONCRETE TRUCKS SHALL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASHWATER ONSITE.

FERTILIZER/HERBICIDES: THESE PRODUCTS SHALL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS, THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT, OR THE RATES IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS SHALL BE UNDER A ROOF IN SEALED CONTAINERS.

BUILDING MATERIALS: NO BUILDING OR CONSTRUCTION MATERIALS SHALL BE BURIED OR DISPOSED OF ONSITE. ALL SUCH MATERIAL SHALL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

SPILL CLEANUP AND CONTROL PRACTICES

1. LOCAL, STATE, AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND PROCEDURES SHALL BE MADE AVAILABLE TO SITE PERSONNEL.
2. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA(S). TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROPERLY-LABELED PLASTIC AND METAL WASTE CONTAINERS.
3. SPILL PREVENTION PRACTICES AND PROCEDURES SHALL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
4. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS SHALL BE REPORTED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.
5. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) MUST BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
6. FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) MUST BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
7. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD MUST BE CONTACTED WITHIN 24 HOURS.
8. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL SHALL BE CLEANED UP AND LOCAL AGENCIES MUST BE CONTACTED AS REQUIRED.

IF MORE THAN 1,320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS, THE CONTRACTOR SHALL SUBMIT A REVISED SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN TO THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN FOR THEIR REVIEW AND APPROVAL.

ADDITIONAL BMP'S INCLUDE THE FOLLOWING:

1. A LARGE SIGN AT LEAST 4' x 8 IN SIZE MUST BE ON SITE ON THE ACTUAL DAY OF CONSTRUCTION VISIBLE FROM A PUBLIC ROADWAY IDENTIFYING THE CONSTRUCTION SITE, THE PERMITTEE(S), AND THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S) UNTIL A NOT HAS BEEN ISSUED.
2. USE MULCH FILTER BERMS, IN ADDITION TO A SILT FENCE, ON THE SITE PERIMETER WHEREVER CONSTRUCTION STORMWATER (INCLUDING SHEET FLOW) MAY BE DISCHARGED. MULCH FILTER BERMS CANNOT BE PLACED IN WATERWAYS OR AREAS OF CONCENTRATED FLOW.
3. SOIL TESTS MUST BE CONDUCTED TO IDENTIFY AND IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.
4. CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24 HOUR PERIOD, RECOGNIZING THE EXCEPTIONS SPECIFIED IN PART IV.D.6.D. OF THE NPDES PERMITS.

INSPECTIONS

EACH EROSION AND SEDIMENT CONTROL AND STORM WATER MANAGEMENT DEVICE WILL BE INSPECTED IN ACCORDANCE WITH THIS ES&PC, CONTRACT DOCUMENTS AND CONSTRUCTION PLANS. ALL INSPECTIONS REQUIRED BY THIS ES&PC SHALL BE CONDUCTED BY QUALIFIED PERSONNEL AS DEFINED BY THE PERMIT. FOR THIS PROJECT THE CONTRACTOR IS OBLIGATED, BY AGREEMENT WITH THE OWNER, TO PROVIDE QUALIFIED PERSONNEL FOR ALL INSPECTIONS.


REQUIREMENTS FOR INSPECTION AND MAINTENANCE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. EACH DAY WHEN ANY FORM OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT; (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING; AND (C) MEASURE RAINFALL ONCE EACH 24-HOUR PERIOD AT THE SITE. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
2. THE DESIGN PROFESSIONAL WHO PREPARES THE ES & PC PLAN IS TO INSPECT THE INSTALLATION OF BMP'S WITHIN 7 DAYS AFTER INITIAL CONSTRUCTION ACTIVITY BEGINS.
3. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCH OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NONWORKING SATURDAY, NONWORKING SUNDAY, OR ANY NONWORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE THAT HAVE NOT UNDERGONE FINAL STABILIZATION; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION THAT HAVE NOT UNDERGONE FINAL STABILIZATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.a.(3). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
4. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION IS RECEIVED BY THE EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
5. BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
6. A REPORT OF EACH INSPECTION THAT INCLUDES NAME(S) OF PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.a.(4). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE, THE REPORT SHALL CONTAIN A CERTIFICATION THAT THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN AND THIS PERMIT. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G. OF THIS PERMIT.

MAINTENANCE

THE CONTRACTOR WILL IMPLEMENT ROUTINE MAINTENANCE PROCEDURES, SUCH AS REMOVING SILT AT SILT BARRIERS WHEN THE ACCUMULATION REACHES FIFTY PERCENT OF CAPACITY, TO ENSURE THAT THE BMPs WILL FUNCTION AS INTENDED THROUGHOUT THE DURATION OF THE PROJECT. WITHIN 48 HOURS FOLLOWING EACH INSPECTION, ANY REQUIRED MAINTENANCE MUST BE COMPLETED. MAINTENANCE OF EACH EROSION AND SEDIMENT CONTROL DEVICE WILL BE PERFORMED THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL FINAL STABILIZATION IS ACHIEVED.

TOTAL DISTURBED AREA = 4.79 ACRES



KNOW WHAT'S BELOW.
CALL BEFORE YOU DIG.
LLANE ANTES DE CAVAR.
IT'S THE LA LEY


CALL 811 BEFORE YOU DIG!
CALL BEFORE YOU DIG! 1.800.282.7411

24-HOUR CONTACT

NAME: MIGUEL A. BACA, P.E.

PHONE: (770) 920-3819

OWNER/PRIMARY PERMITTER:
DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY
8763 HOSPITAL DRIVE
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Georgia Soil and Water
Conservation Commission

Alan E. Bowling
Level II Certified Design Professional

Certification Number: 000000432 Expires: 02/01/2020
Issued: 08/10/2008

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



EROSION SEDIMENTATION
AND POLLUTION CONTROL

PLAN
CIVIL
NOTES

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C012

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342



				PROJECT ENGINEER:	D. EHRHARDT	
				DESIGNED BY:	B. MOSS	
				DRAWN BY:	S. KANE	
				CHECKED BY:	D. EHRHARDT	
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE		
REV	ISSUED FOR	DATE	BY			

100% SUBMITTAL

SAMPLING REQUIREMENTS

THE PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THE PERMIT.

RECEIVING WATER SAMPLES AND STORM WATER DISCHARGE SAMPLES WILL BE COLLECTED BY GRAB SAMPLES AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES SPECIFIED BY THE PERMIT. THE FREQUENCY OF SAMPLING WILL BE AS DESCRIBED IN THE FOLLOWING SECTION. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED BELOW WILL BE REPORTED TO THE EPD.

1. SAMPLE CONTAINERS WILL BE LABELED BEFORE COLLECTING SAMPLES.
2. SAMPLES WILL BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.
3. CLEAN GLASS OR PLASTIC JARS WITH LARGE MOUTHS WILL BE USED TO COLLECT SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
4. MANUAL, AUTOMATIC OR RINSING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THE PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.
5. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALL BEYOND THE MINIMUM FREQUENCY STATED IN THE PERMIT MUST BE REPORTED TO EPD.

SAMPLING POINTS

THE CONTRACTOR WILL SAMPLE UNNAMED TRIBUTARIES AND CREEKS AT THE LOCATIONS LISTED BELOW. THE PLAN SHEETS WITHIN THESE CONSTRUCTION PLANS SHOW THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED, AND THE SAMPLING LOCATIONS FOR EACH REPRESENTATIVE STORM WATER OUTFALL.

- SAMPLE LOCATIONS 1 THROUGH 4 - AT THE CENTERLINE OF ANNAEAWAKEE CREEK AND AT THE CENTERLINE OF UNNAMED TRIBUTARY TO ANNAEAWAKEE CREEK
UPSTREAM: 1: LATITUDE: 33°42'48.04"N LONGITUDE: 84°44'26.01"W (NEAR HEADWALL)
2: LATITUDE: 33°42'46.51"N LONGITUDE: 84°44'26.17"W (NEAR CONFLUENCE)
DOWNSTREAM: 3: LATITUDE: 33°42'46.77"N LONGITUDE: 84°44'15.87"W (NEAR SANDBAG DIVERSION)
4: LATITUDE: 33°42'50.66"N LONGITUDE: 84°44'09.06"W (DOWNSTREAM OF TEMP
STREAM CROSSING)

IT SHOULD BE NOTED THAT ALL OF THE ABOVE SAMPLING LOCATIONS MAY NOT BE ACTIVE AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT. A SAMPLING LOCATION WILL BE ACTIVE FROM THE TIME CONSTRUCTION ACTIVITY STARTS IN THE WATERSHED THAT FEEDS THE SAMPLING LOCATION UNTIL FINAL STABILIZATION IS ACHIEVED IN THAT WATERSHED. THE TIMING OF THE CONSTRUCTION ACTIVITY WITHIN A WATERSHED DEPENDS ON CONSTRUCTION STAGING. HOWEVER, CONSTRUCTION STAGING HAS NOT YET BEEN DETERMINED. THE CONTRACTOR MAY STAGE THE CONSTRUCTION SO THAT 1) CONSTRUCTION BEGINS AT ONE END OF THE PROJECT AND PROGRESSES SYSTEMATICALLY TO THE OTHER END; 2) CONSTRUCTION BEGINS AT BOTH ENDS OF THE PROJECT AND PROGRESSES TO A COMMON MEETING POINT; OR 3) MULTIPLE CREWS BEGIN CONSTRUCTION AT DIFFERENT SECTIONS OF THE PROJECT AND EVENTUALLY LINK UP WITH EACH OTHER.

MANUAL SAMPLING

- SAMPLING WILL BEGIN AT THE DESIGNATED REPRESENTATIVE RECEIVING WATER(S) AT THE DOWNSTREAM LOCATION. THIS SAMPLE WILL BE TAKEN AT THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PROJECT. FOR LARGE STREAMS WHERE VARIATIONS IN COLOR ARE VISIBLE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES MAY BE USED FOR THE DOWNSTREAM VALUE.

- UPSTREAM SAMPLES WILL BE TAKEN AFTER DOWNSTREAM SAMPLES HAVE BEEN ACQUIRED. THE UPSTREAM SAMPLE WILL BE TAKEN AT THE DISCHARGE FARTHEST UPSTREAM AT THE SITE BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PROJECT. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES MAY BE USED FOR THE UPSTREAM VALUE.
- THE SAMPLES WILL BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNEL(S).
- CARE WILL BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.
- THE SAMPLING CONTAINER WILL BE HELD SO THAT THE OPENING FACES UPSTREAM.
- THE SAMPLES WILL BE KEPT FREE OF FLOATING DEBRIS.
- ONCE THE SAMPLE JAR OR BOTTLE IS FULL AND CAPPED, IT WILL BE TRANSPORTED TO THE LOCATION WHERE THE TURBIDITY TESTING WILL BE CONDUCTED. ALL TURBIDITY TESTS WILL BE CONDUCTED IMMEDIATELY, BUT NO LATER THAN 48 HOURS AFTER THE TIME THE SAMPLE WAS OBTAINED.

SAMPLING FREQUENCY

THE CONTRACTOR MUST SAMPLE IN ACCORDANCE WITH THIS ES&PCP AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW:

- a. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING DURING NORMAL BUSINESS HOURS* (MONDAY THROUGH FRIDAY, 8:00 AM TO 5:00 PM AND SATURDAY 8:00 AM TO 5:00 PM, EXCLUDING ALL NONWORKING FEDERAL HOLIDAYS, WHEN CONSTRUCTION ACTIVITY IS BEING CONDUCTED BY THE PRIMARY PERMITTEE) THAT OCCURS AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION;
- b. IN ADDITION TO ITEM A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING DURING NORMAL BUSINESS HOURS* THAT OCCURS EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION, WHICHEVER COMES FIRST;
- c. AT THE TIME OF SAMPLING PERFORMED PURSUANT TO ITEMS A) AND B) ABOVE, IF BMPS ARE FOUND TO BE PROPERLY DESIGNED, INSTALLED, AND MAINTAINED, NO FURTHER ACTION IS REQUIRED. IF BMPS IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM ARE NOT PROPERLY DESIGNED, INSTALLED, AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPS ARE PROPERLY DESIGNED, INSTALLED, AND MAINTAINED.
- d. EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT THAT HAVE MET THE SAMPLING REQUIRED BY (a) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (b). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (b) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (c) ABOVE.

*NOTE THAT THE CONTRACTOR MAY CHOOSE TO MEET THE REQUIREMENTS OF A) AND B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING AT ANY TIME OF THE DAY OR WEEK.

RAINFALL DATA

MEASUREMENT OF RAINFALL DATA WILL BE RECORDED DAILY (ONCE DURING EACH 24-HOUR PERIOD) AT THE DOWNSTREAM MONITORING POINT FOR EACH ACTIVE CONSTRUCTION STAGE IN WHICH STREAM MONITORING IS UTILIZED AND NEAR THE CENTER OF EACH ACTIVE CONSTRUCTION STAGE IN WHICH OUTFALL MONITORING IS UTILIZED. THE CONTRACTOR WILL ESTABLISH A RAIN GAUGE ON EACH ACTIVE CONSTRUCTION STAGE FOR THIS PURPOSE. FURTHERMORE, THE CONTRACTOR WILL COLLECT AND RECORD THE RAINFALL DATA ON THE DAILY RAINFALL MONITORING DATA FORM.

TESTING

THE CONTRACTOR WILL EMPLOY QUALIFIED PERSONNEL WHO SHALL GATHER SAMPLES OF STORM WATER AS OUTLINED IN THE PERMIT PART IV, D.5 AND AS FURTHER DEFINED IN THIS ESPCP. THE CONTRACTOR WILL HAVE THE TURBIDITY OF EACH SAMPLE TESTED BY A

QUALIFIED TESTING LABORATORY.

ALL TURBIDITY TESTS WILL BE CONDUCTED IN ACCORDANCE WITH 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001 AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

NTU LIMIT RATIONAL

THE CONTRACTOR SHALL SAMPLE THE RECEIVING STREAM BOTH UPSTREAM OF THE PROJECT AREA AND DOWNSTREAM OF THE PROJECT AREA. THE TOTAL INCREASE IN TURBIDITY FROM SAMPLE LOCATIONS UPSTREAM AND DOWNSTREAM OF THE CONSTRUCTION SITE SHALL NOT EXCEED 25 NTU.

(SIDE NOTE: THE VALUE OF NTU CHANGES WITH TYPE OF RIVER AND WHAT KIND OF STREAM IT IS. FOR THIS PROJECT IT IS 25, BUT MAY NOT BE FOR OTHERS)

REPORTING

THE CONTRACTOR SHALL SUBMIT A SUMMARY OF THE MONITORING RESULTS TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE LIST IN APPENDIX A OF THE PERMIT BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THE PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, THE EPD MAY REQUIRE THE CONTRACTOR TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G OF THE PERMIT. SAMPLING REPORTS MUST BE SUBMITTED TO THE EPD UNTIL SUCH TIME AS A NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI OF THE PERMIT.

IN ADDITION TO OTHER RECORD-KEEPING REQUIREMENTS, THE MONITORING INFORMATION SHALL INCLUDE:

- a. THE DATE, EXACT PLACE, AND TIME OF SAMPLING OR MEASUREMENTS;
- b. THE NAME(S) OF THE INDIVIDUAL(S) WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
- c. THE DATE(S) ANALYSES WERE PERFORMED;
- d. THE TIME(S) ANALYSES WERE INITIATED;
- e. THE NAME(S) OF THE INDIVIDUAL(S) WHO PERFORMED THE ANALYSES;
- f. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
- g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS; AND
- h. RESULTS THAT EXCEED 1,000 NTU SHALL BE REPORTED AS "EXCEEDS 1,000 NTU."

THE CONTRACTOR MUST RETAIN COPIES OF ALL MONITORING RESULTS AND SHALL PROVIDE THE OWNER WITH COPIES OF ALL MONITORING RESULTS.

REPORT SUBMITTAL

ALL WRITTEN CORRESPONDENCE REQUIRED BY THE PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THE PERMIT. COPIES OF THE DATA SENT TO GEORGIA EPD, INCLUDING THE RETURN RECEIPTS, WILL BE PROVIDED TO THE OWNER AND THE ENGINEER ON A MONTHLY BASIS.

RETENTION OF RECORDS

THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI:

- a. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
- b. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
- c. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
- d. A COPY OF ALL MONITORING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
- e. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.a. OF THIS PERMIT;
- f. A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND
- g. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.a.(1)(c) OF THIS PERMIT.

COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, REPORTS, PLANS, MONITORING REPORTS, MONITORING INFORMATION, INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

					PROJECT ENGINEER:	D. EHRHARDT
					DESIGNED BY:	B. MOSS
					DRAWN BY:	J. JORDAN
					CHECKED BY:	D. EHRHARDT
					IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
REV	ISSUED FOR	DATE	BY			

100% SUBMITTAL



Hazen

HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

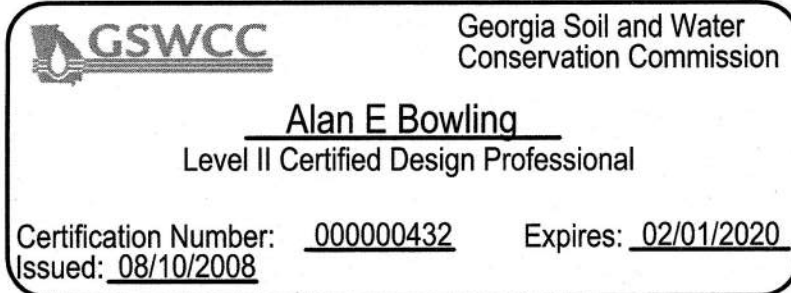
STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



EROSION SEDIMENTATION
AND POLLUTION CONTROL

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DATE:	MAY 2019
HAZEN NO.:	31247-010
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DRAWING NUMBER:	C013

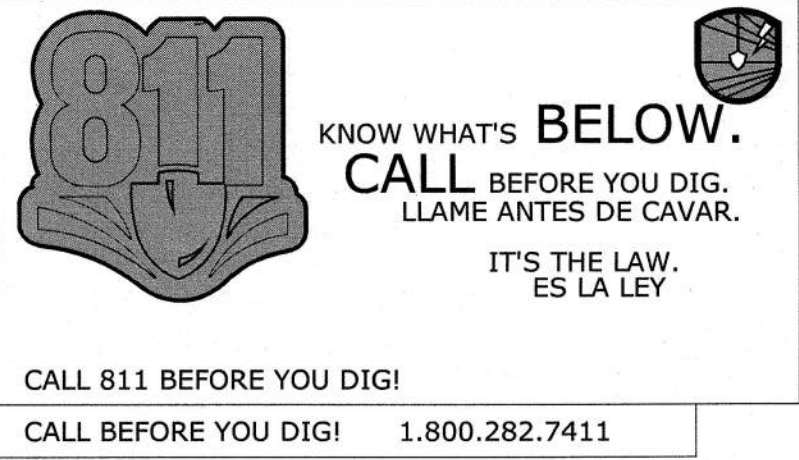


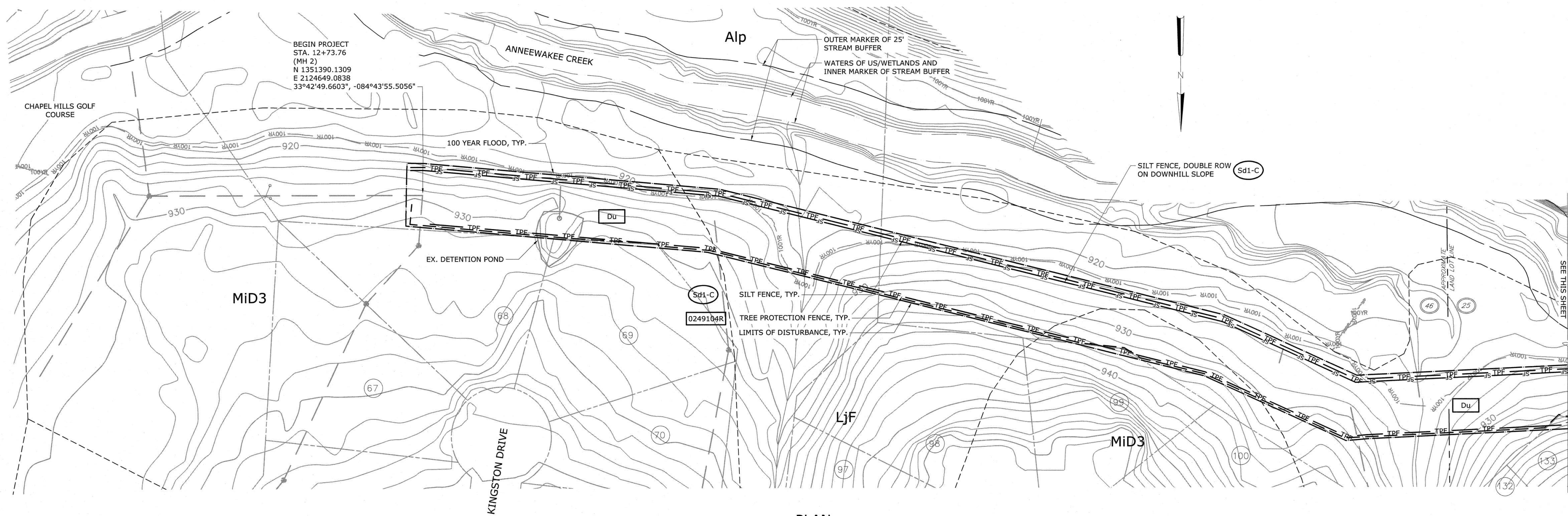
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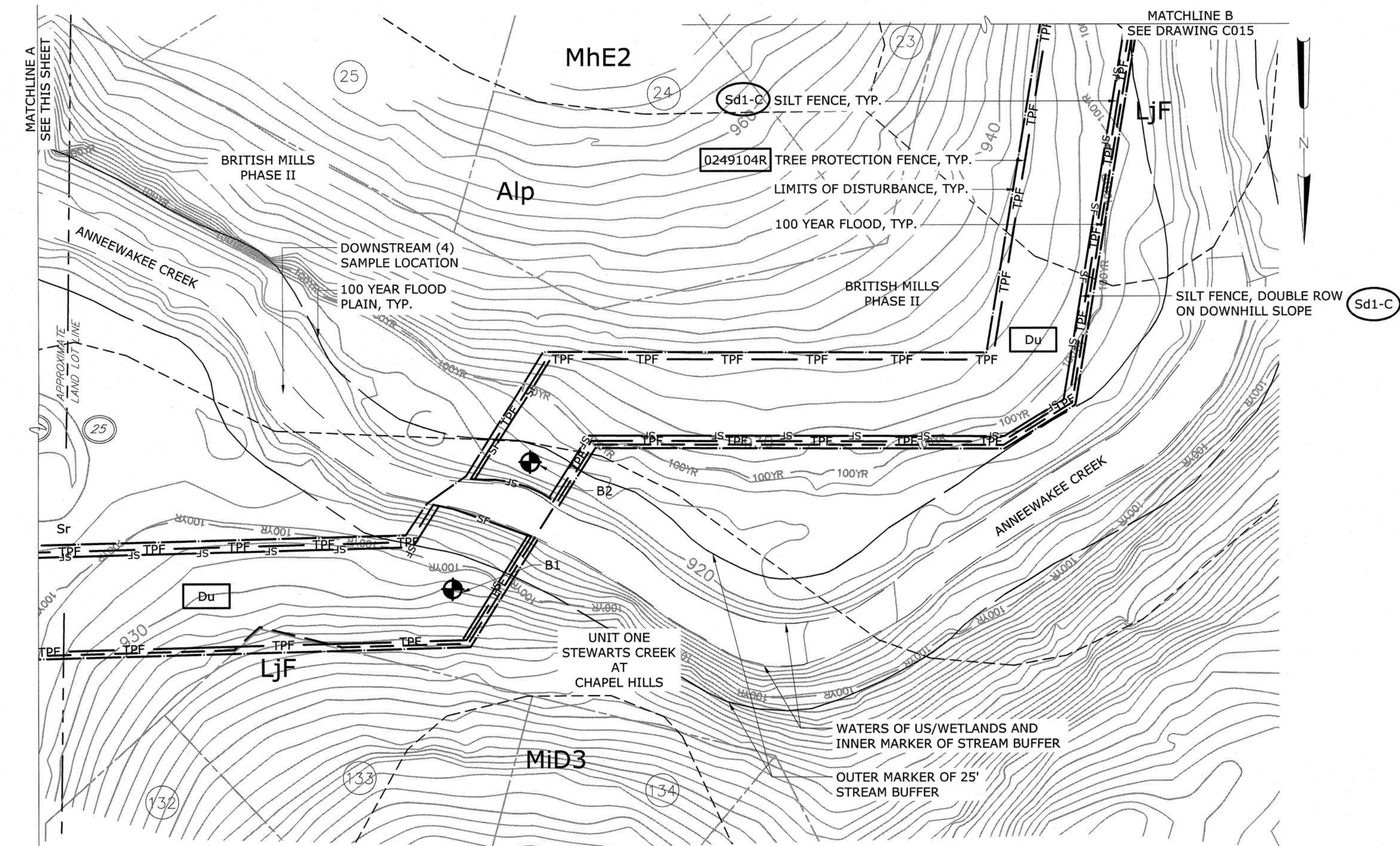
NAME: MIGUEL A. BACA, P.E.

PHONE: (770) 920-3819





PLAN
1" = 50'



PLAN
1" = 50'

GEORGIA EROSION CONTROL KEY:

Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
Du	DUST CONTROL ON DISTURBED AREAS
Co	CONSTRUCTION ENTRANCE/EXIT
Sd1-C	SEDIMENT BARRIER (SILT FENCE, TYPE "C")

LINETYPE KEY:

---	APPROXIMATE LIMITS OF DISTURBANCE
---	SILT FENCE, TYPE "C", SINGLE ROW
---	TREE PROTECTION FENCE
---	APPROXIMATE LINE OF SOILS SERIES DELINEATION
---	WATERS OF THE US/WETLANDS

SOIL SERIES AND DEFINITIONS			
Alp	ALLUVIAL LAND	--	SOMEWHAT POORLY DRAINED
LjF	LOUSIA FINE SANDY LOAM	25-40% SLOPES	--
Mid3	MADISON GRAVELLY SANDY CLAY LOAM	10-15% SLOPES	SEVERELY ERODED

SILT FENCE STORAGE CALCULATIONS:

TOTAL SILT FENCE TO BE INSTALLED = 3,210 LF
 16.75 CY OF STORAGE PER 100 LF OF SILT FENCE
 (3,210LF / 100 LF) * 16.75 CY = 537.668 CY OF STORAGE
 TOTAL DISTURBED AREA = 4.79 ACRES x 67 CY/AC
 TOTAL STORAGE REQUIRED = 320.93 CY
 TOTAL STORAGE PROVIDED = 537.68 CY, SITE COMPLIES WITH GEORGIA EROSION CONTROL CRITERIA.

ANTICIPATED ACTIVITY SCHEDULE

ACTIVITY	Q1	Q2	Q3	Q4
INSTALL CONSTRUCTION EXIT, SILT FENCE, & TREE PROTECTION FENCE	X			
PRELIMINARY SITEMARK	X			
INSTALL GRADING PHASE EROSION MEASURES	X			
FACILITY CONSTRUCTION		X	X	
TEMPORARY GRASSING		X	X	
CURB/GUTTER & PAVEMENT		X	X	
FINE GRADING		X	X	
FINAL GRASSING			X	
REMOVE TEMPORARY EROSION MEASURES & TREE PROTECTION FENCE				X

NOTES:

- NO WASTE SHALL BE DISPOSED OF INTO STORMWATER INLETS OR WATERS OF THE STATE.
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.
- EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
- DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY VEGETATION OR MULCH IF LAND-DISTURBING ACTIVITIES CEASE FOR MORE THAN 14 CALENDAR DAYS.
- ALL ENVIRONMENTAL BUFFERS SHALL BE CLEARLY DELINEATED IN THE FIELD BEFORE CLEARING AND GRUBBING BEGINS.
- THE SOURCES OF INFORMATION FOR THE FLOODPLAIN NEAREST THE PROJECT SITE ARE FEMA FIRM PANELS 153 FOR DOUGLAS COUNTY, GEORGIA AND INCORPORATED AREAS, MAP NUMBER 13097C0153C EFFECTIVE 8/18/2009.
- STATE WATERS EXIST WITHIN 200 FEET OF THE LIMITS OF CONSTRUCTION ON THE PROJECT SITE. ANNEEWAKEE CREEK IS LOCATED TO THE ALONG THE PROJECT SITE, AND ITS 100-YEAR FLOODPLAIN IS LOCATED WITHIN THE LIMITS OF THE PROJECT SITE.
- TOTAL PROJECT ACRES 4.79 AC.
- SEDIMENT STORAGE MAINTENANCE INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE 1/3 FULL VOLUME.
- CONCENTRATED FLOW AREAS AND ALL SLOPES STEEPER THAN 2:5:1 WITH A HEIGHT OF TEN FEET OR GREATER SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKET.
- TOTAL WETLAND ACRES WITHIN THE LIMITS OF CONSTRUCTION ON THE PROJECT SITE ARE 0.06 AC.
- CONTRACTOR TO PROVIDE INLET PROTECTION (Sd2-Bg) ON ALL STORM INLETS WITHIN LIMITS OF DISTURBANCE OR WITHIN CLOSE PROXIMITY OF CONSTRUCTION ACTIVITIES.
- THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMPs, AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5. WITHIN 7 DAYS AFTER INSTALLATION.
- NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FOET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
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- WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

TOTAL DISTURBED AREA = 4.79 ACRES

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GSWCC Georgia Soil and Water Conservation Commission
 Alan E. Bowling
 Level II Certified Design Professional
 Certification Number: 000000432 Expires: 02/01/2020

OWNER/PRIMARY PERMITTEE:
 DOUGLASVILLE-DOUGLAS COUNTY
 WATER AND SEWER AUTHORITY
 8763 HOSPITAL DRIVE
 DOUGLASVILLE, GA 30134
 PH. (770) 920-3819
 MBACA@DDCWSA.COM

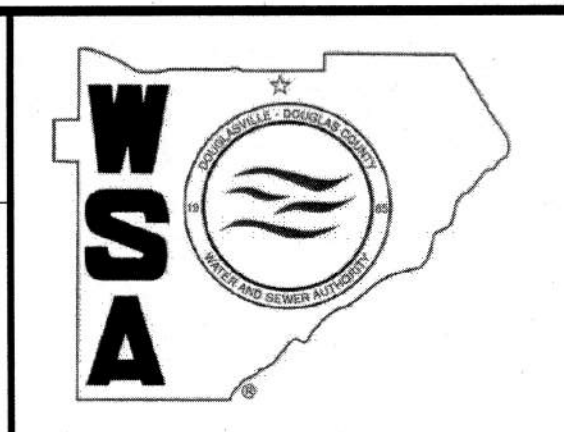
24-HOUR CONTACT
 NAME: MIGUEL A. BACA, P.E.
 PHONE: (770) 920-3819

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	D. EHRHARDT
DESIGNED BY:	B. MOSS
DRAWN BY:	J. JORDAN
CHECKED BY:	D. EHRHARDT
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

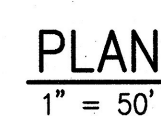
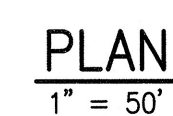
Hazen
 HAZEN AND SAWYER
 5775 PEACHTREE DUNWOODY ROAD,
 SUITE D-520
 ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
 WATER AND SEWER AUTHORITY
 STEWART MILL ROAD SANITARY SEWER
 REPLACEMENT PROJECT

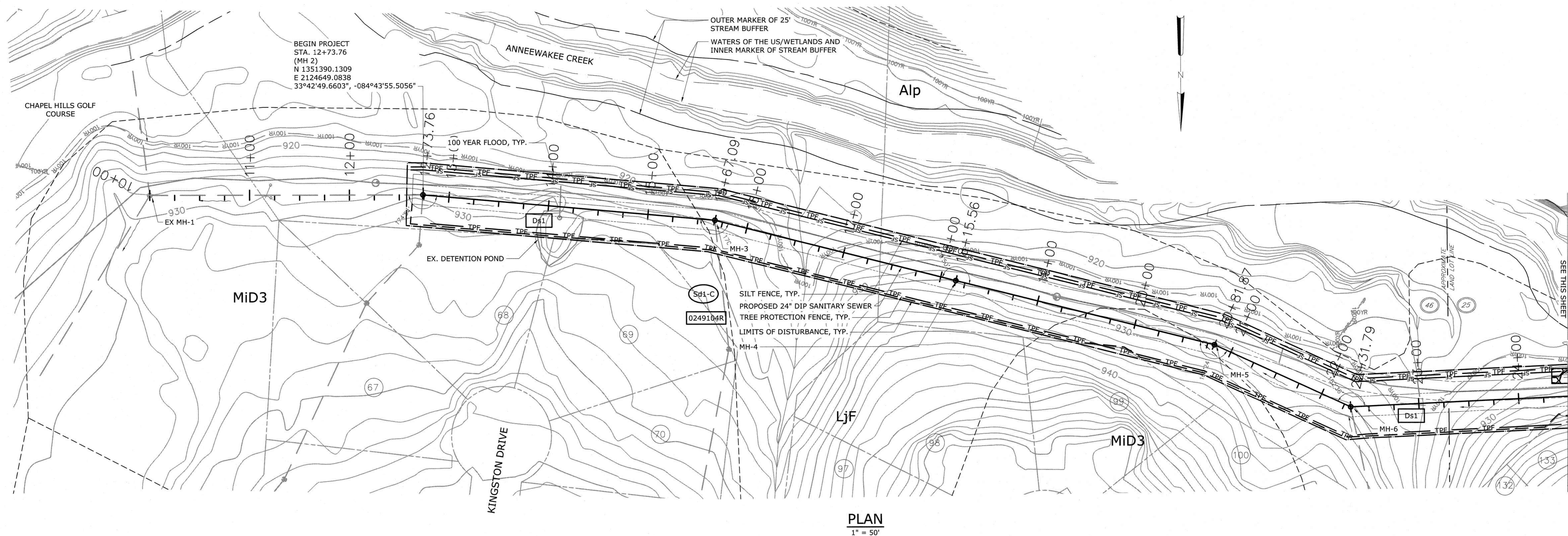


EROSION SEDIMENTATION AND POLLUTION
 CONTROL PLAN
 CIVIL
 CLEARING PHASE

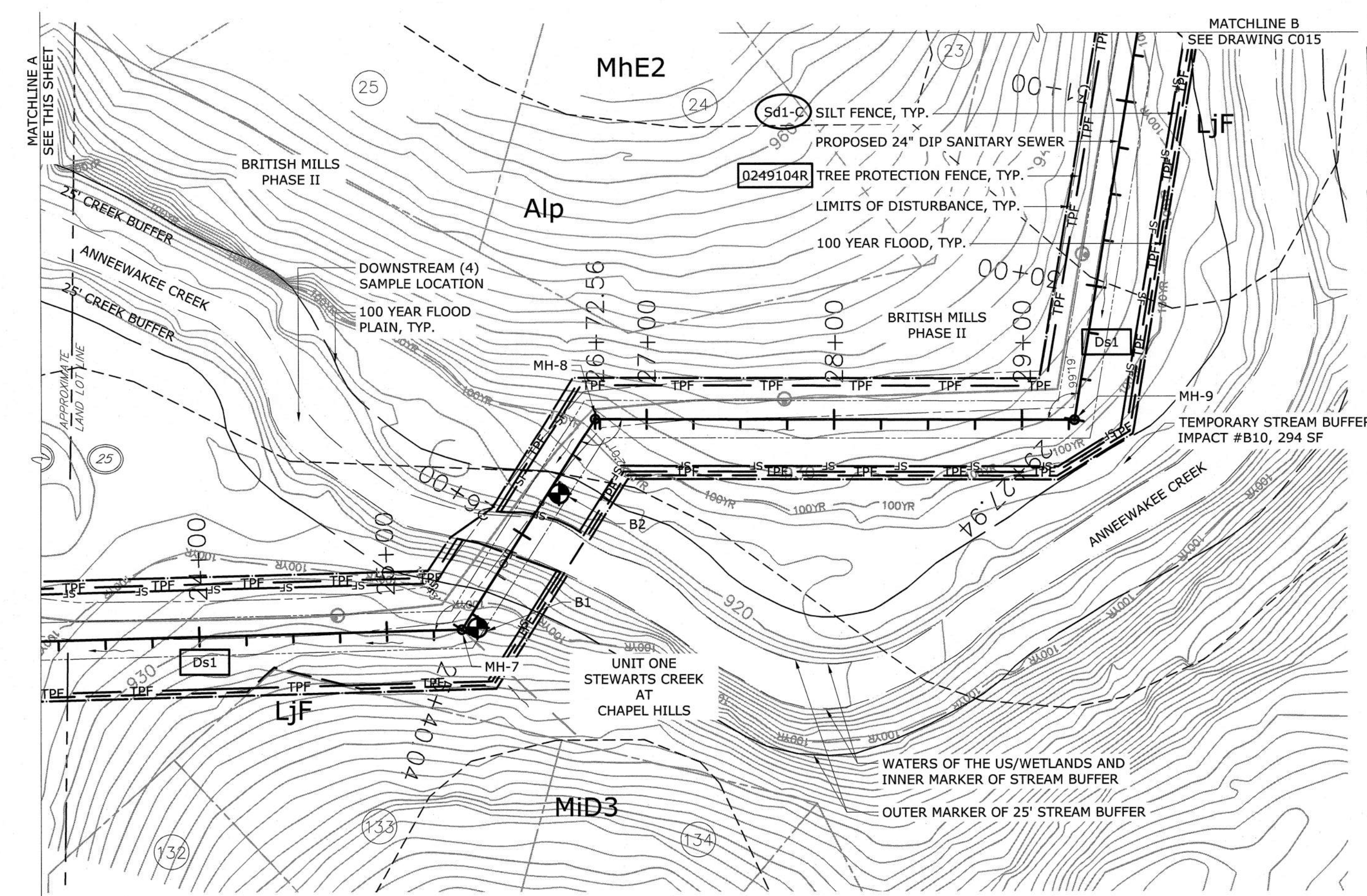
DATE: MAY 2019
 HAZEN NO.: 31247-010
 CONTRACT NO.: 22B4413-02
 DRAWING NUMBER: C014



- | SOIL SERIES AND DEFINITIONS | | | |
|-----------------------------|----------------------------------|---------------|-------------------------|
| Alp | ALLUVIAL LAND | -- | SOMEWHAT POORLY DRAINED |
| Alm | ALLUVIAL LAND | -- | MODERATELY WELL DRAINED |
| LjF | LOUISIA FINE SANDY LOAM | 25-40% SLOPES | -- |
| Mhd2 | MADISON GRAVELLY FINE SANDY LOAM | 10-15% SLOPES | MODERATELY ERODED |
| Mhe2 | MADISON GRAVELLY FINE SANDY LOAM | 15-25% SLOPES | ERODED |



PLAN
1" = 50'



PLAN
1" = 50'

GEORGIA EROSION CONTROL KEY:

- Ds1 DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
- Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
- Du DUST CONTROL ON DISTURBED AREAS
- Co CONSTRUCTION ENTRANCE/EXIT
- Sd1-C SEDIMENT BARRIER (SILT FENCE, TYPE "C")

LINETYPE KEY:

- APPROXIMATE LIMITS OF DISTURBANCE
- SILT FENCE, TYPE "C", SINGLE ROW
- TREE PROTECTION FENCE
- APPROXIMATE LINE OF SOILS SERIES DELINEATION
- WATERS OF THE US/WETLANDS

TOTAL DISTURBED AREA = 4.79 ACRES

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Georgia Soil and Water
Conservation Commission

Alan E. Bowling
Level II Certified Design Professional

Certification Number: 000000432 Expires: 02/01/2020
Issued: 08/10/2008

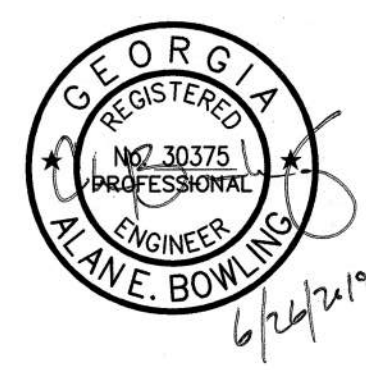
OWNER/PRIMARY PERMITTEE:
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PHONE: (770) 920-3819

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER: D. EHRHARDT
DESIGNED BY: B. MOSS
DRAWN BY: J. JORDAN
CHECKED BY: D. EHRHARDT
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

100% SUBMITTAL



Hazen

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ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT

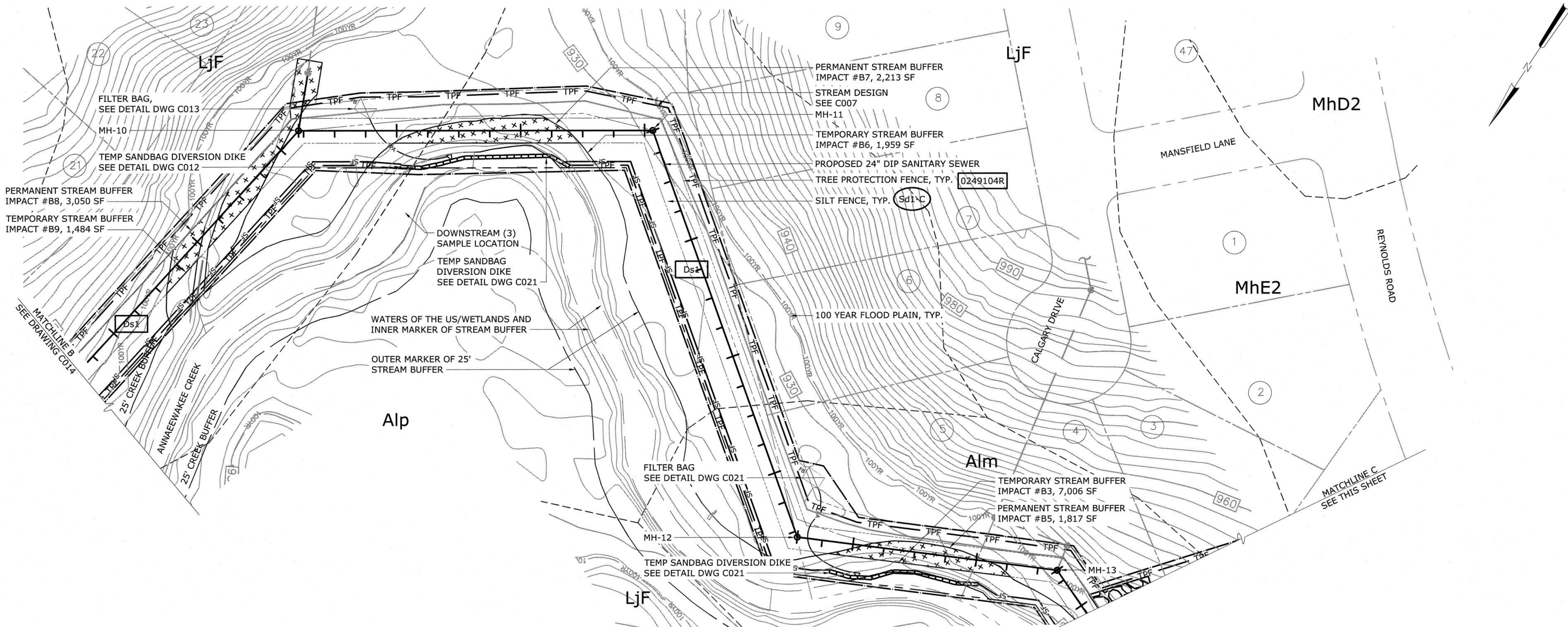


EROSION SEDIMENTATION AND POLLUTION
CONTROL PLAN
CIVIL
GRADING PHASE

DATE: MAY 2019
HAZEN NO.: 31247-010
CONTRACT NO.: 22B4413-02
DRAWING NUMBER: C016

NOTES:

1. THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMPs, AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5. WITHIN 7 DAYS AFTER INSTALLATION.
2. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WASTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
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4. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
5. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.



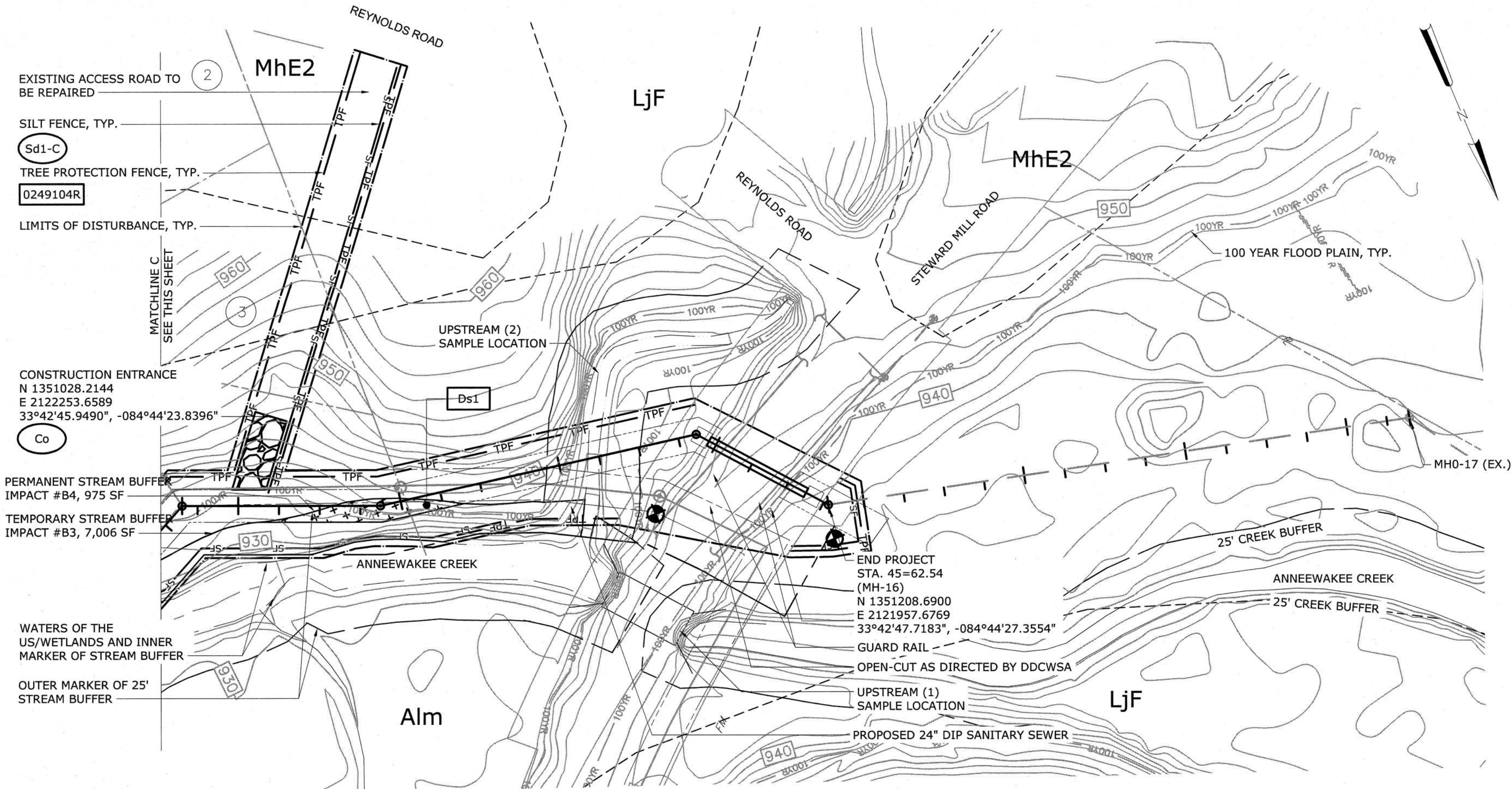
PLAN
1" = 50'

GEORGIA EROSION CONTROL KEY:

- Ds1 DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
- Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
- Du DUST CONTROL ON DISTURBED AREAS
- Co CONSTRUCTION ENTRANCE/EXIT
- Sd1-C SEDIMENT BARRIER (SILT FENCE, TYPE "C")

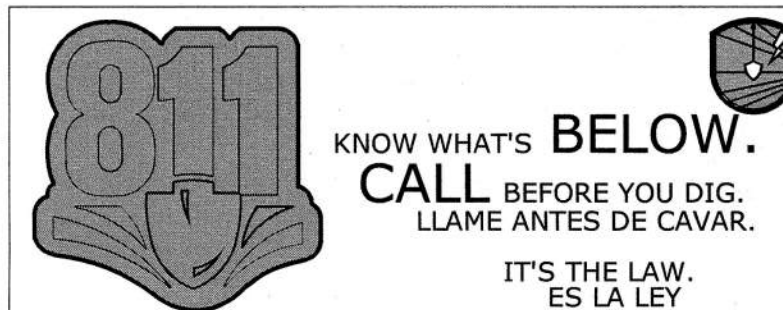
LINETYPE KEY:

- APPROXIMATE LIMITS OF DISTURBANCE
- SILT FENCE, TYPE "C", SINGLE ROW
- TREE PROTECTION FENCE
- APPROXIMATE LINE OF SOILS SERIES DELINEATION
- TEMPORARY PUMP AROUND
- WATERS OF THE US/WETLANDS
- FILTER BAG
- SANDBAG DIVERSION DIKE



PLAN
1" = 50'

TOTAL DISTURBED AREA = 4.79 ACRES



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GSWCC Georgia Soil and Water Conservation Commission

Alan E. Bowling
Level II Certified Design Professional

Certification Number: 000000432 Expires: 02/01/2020
Issued: 08/10/2008

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0 1/2" 1"	

100% SUBMITTAL



Hazen

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5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

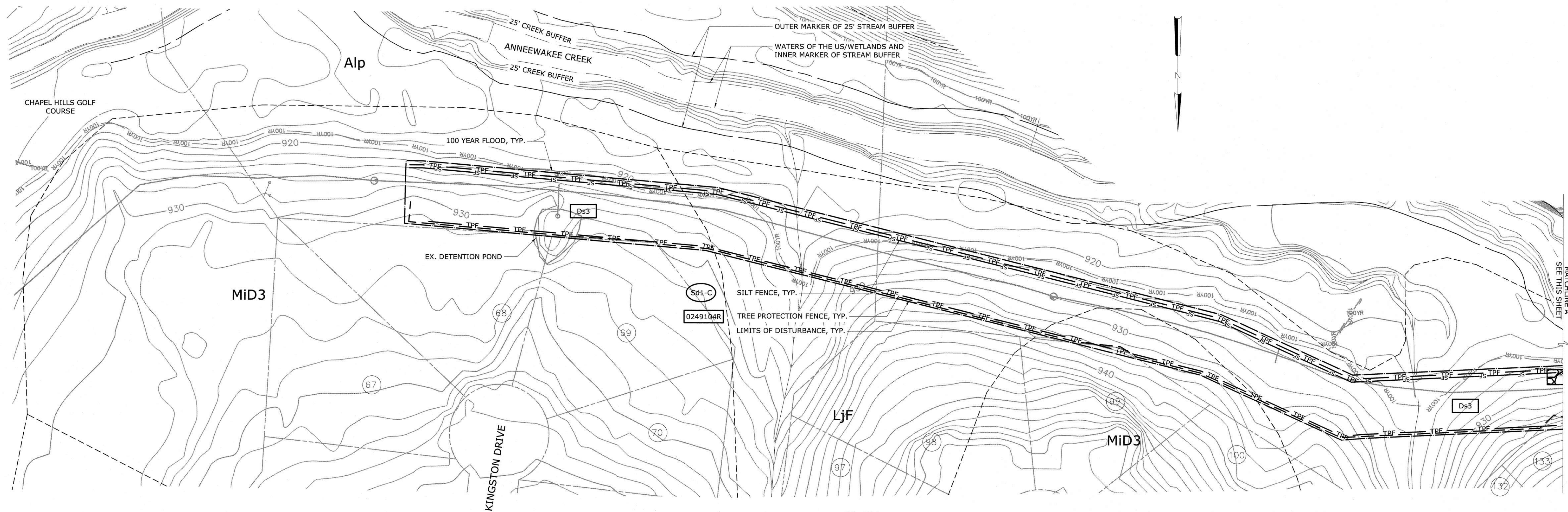
DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT

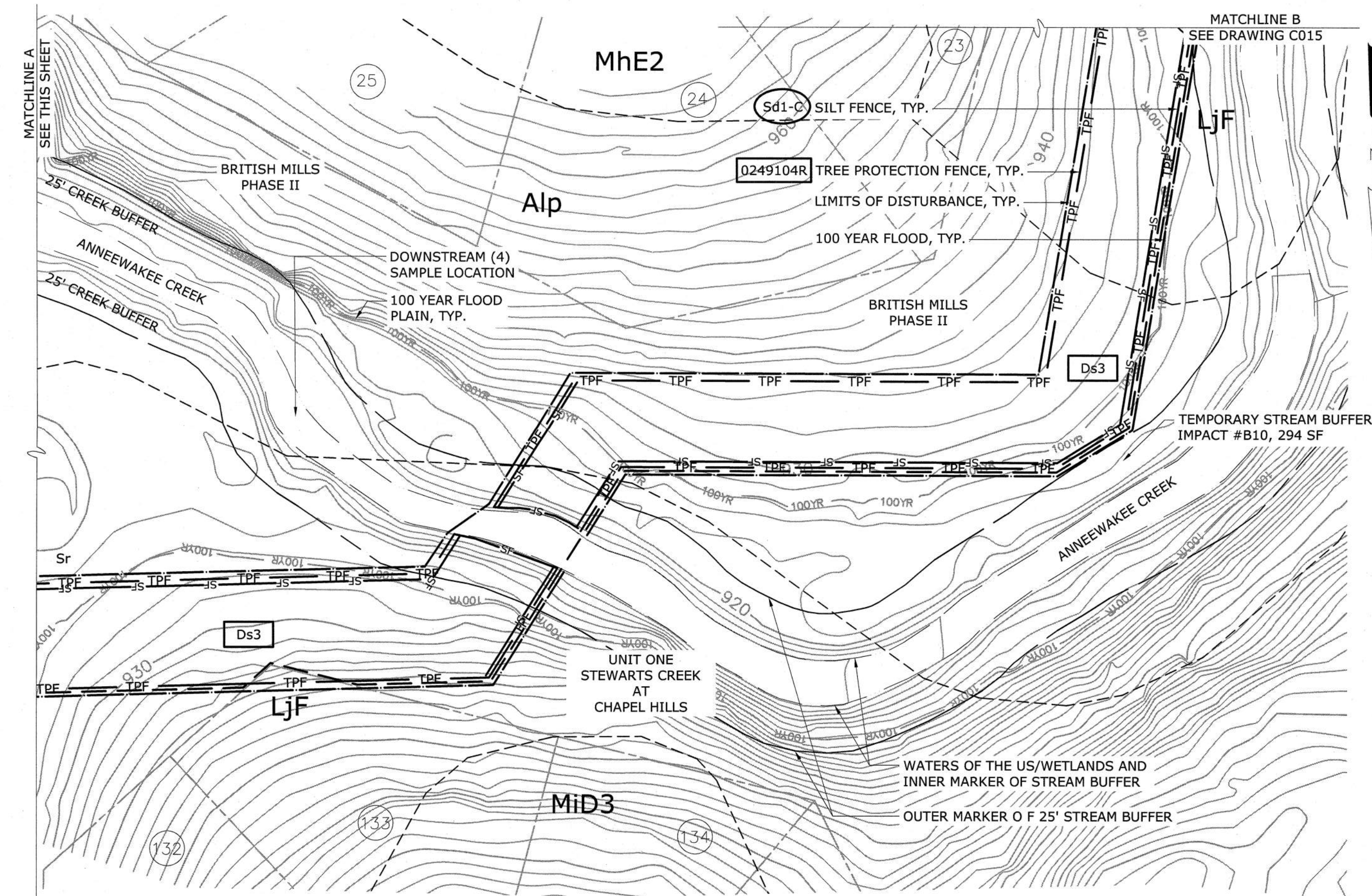


EROSION SEDIMENTATION AND POLLUTION
CONTROL PLAN
CIVIL
GRADING PHASE

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C017



PLAN
1" = 50'



PLAN
1" = 50'

GEORGIA EROSION CONTROL KEY:

- Ds1** DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
Du DUST CONTROL ON DISTURBED AREAS
Co CONSTRUCTION ENTRANCE/EXIT
Sd1-C SEDIMENT BARRIER (SILT FENCE, TYPE "C")

LINETYPE KEY:

- APPROXIMATE LIMITS OF DISTURBANCE
— SF — SILT FENCE, TYPE "C", SINGLE ROW
— TPF — TREE PROTECTION FENCE
--- APPROXIMATE LINE OF SOILS SERIES DELINEATION
--- WATERS OF THE US/WETLANDS

NOTES:

1. NO WASTE SHALL BE DISPOSED OF INTO STORMWATER INLETS OR WATERS OF THE STATE.
2. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.
3. EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
4. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY VEGETATION OR MULCH IF LAND-DISTURBING ACTIVITIES CEASE FOR MORE THAN 14 CALENDAR DAYS.
5. ALL ENVIRONMENTAL BUFFERS SHALL BE CLEARLY DELINEATED IN THE FIELD BEFORE CLEARING AND GRUBBING BEGINS.
6. THE SOURCES OF INFORMATION FOR THE FLOODPLAIN NEAREST THE PROJECT SITE ARE FEMA FIRM PANELS 153 FOR DOUGLAS COUNTY, GEORGIA AND INCORPORATED AREAS, MAP NUMBER 13097C0153C EFFECTIVE 8/18/2009.
7. STATE WATERS EXIST WITHIN 200 FEET OF THE LIMITS OF CONSTRUCTION ON THE PROJECT SITE. ANNEEWAKEE CREEK IS LOCATED TO THE ALONG THE PROJECT SITE, AND ITS 100-YEAR FLOODPLAIN IS LOCATED WITHIN THE LIMITS OF THE PROJECT SITE.
8. TOTAL PROJECT ACRES 4.79 AC.
9. SEDIMENT STORAGE MAINTENANCE INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE 1/3 FULL VOLUME.
10. CONCENTRATED FLOW AREAS AND ALL SLOPES STEEPER THAN 2.5:1 WITH A HEIGHT OF TEN FEET OR GREATER SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKET.
11. TOTAL WETLAND ACRES WITHIN THE LIMITS OF CONSTRUCTION ON THE PROJECT SITE ARE 0.06 AC.
12. CONTRACTOR TO PROVIDE INLET PROTECTION (Sd2-Bg) ON ALL STORM INLETS WITHIN LIMITS OF DISTURBANCE OR WITHIN CLOSE PROXIMITY OF CONSTRUCTION ACTIVITIES.
13. THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMPs, AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5. WITHIN 7 DAYS AFTER INSTALLATION.
14. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FOET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
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16. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
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Alan E. Bowling
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Certification Number: 000000432 Expires: 02/01/2020
Issued: 08/10/2008

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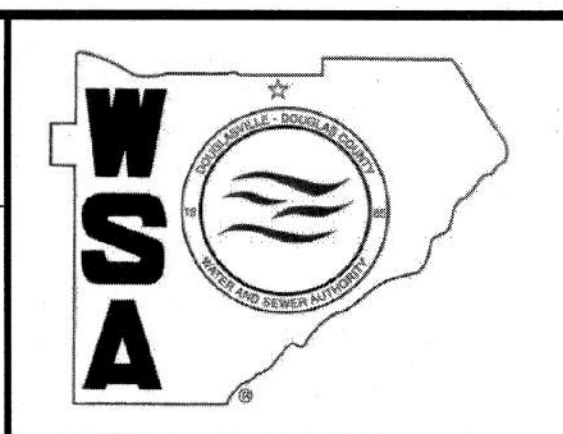
24-HOUR CONTACT
NAME: MIGUEL A. BACA, P.E.
PHONE: (770) 920-3819

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	D. EHRHARDT
DESIGNED BY:	B. MOSS
DRAWN BY:	J. JORDAN
CHECKED BY:	D. EHRHARDT
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

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HAZEN AND SAWYER
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SUITE D-520
ATLANTA, GA 30342

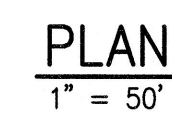
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WATER AND SEWER AUTHORITY
STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT











EROSION SEDIMENTATION AND POLLUTION
CONTROL PLAN
CIVIL
FINAL PHASE

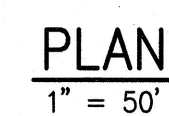
DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C018


1. THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE SEEDING, PERMITS, EROSION CONTROL MEASUREMENTS, PERIMETER CONTROL BMPs, AND SEDIMENT BASIN IN ACCORDANCE WITH PART IV.A.5. WITHIN 7 DAYS AFTER INSTALLATION.
2. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE ES&PC PLAN AREA OF UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25 FEET OF THE POINT OF WRESTED VEGETATION BUT SHALL BE MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
3. AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE SIGNIFICANT EFFECT ON BMPs WITHIN THE ES&PC PLAN COMPLEX MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
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Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
Du	DUST CONTROL ON DISTURBED AREAS
Co	CONSTRUCTION ENTRANCE/EXIT
Sd1-C	SEDIMENT BARRIER (SILT FENCE, TYPE "C")

	APPROXIMATE LIMITS OF DISTURBANCE
	SILT FENCE, TYPE "C", SINGLE ROW
	TREE PROTECTION FENCE
	APPROXIMATE LINE OF SOILS SERIES DELINEATION
	TEMPORARY PUMP AROUND
	WATERS OF THE US/WETLANDS
	FILTER BAG
	SANDBAG DIVERSION DIKE






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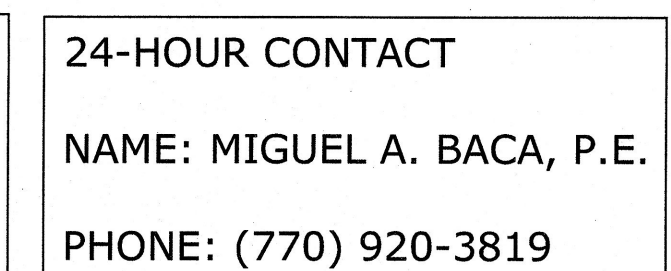
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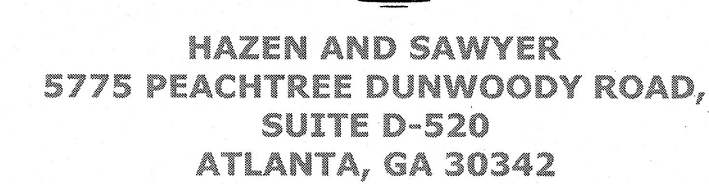


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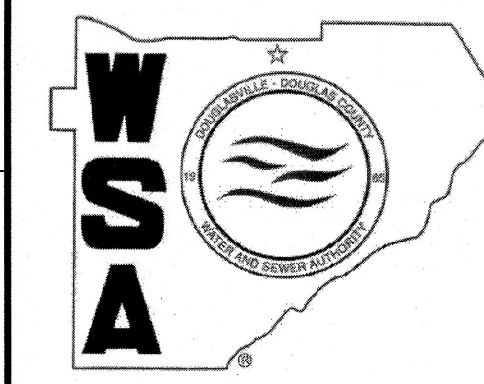
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STEWART MILL ROAD SANITARY SEWER REPLACEMENT PROJECT



DATE:	MAY 2019
ZEN NO.:	31247-010
TRACT NO.:	22B4413-02
DRAWING NUMBER:	
C019	

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS
SWCD: West Georgia
Project Name: Stewart Mill Road Sewer Replacement Address: Stewart Mill Road and Reynolds Road
City/County: Douglas County Date on Plans: May 2019
Name & email of person filling out checklist: Alan Bowling, PE, Level 2: 432.abowling@hazenandsawyer.com

Plan Included
Page # Y/N
C020 Y

1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.
(The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)

2 Level II certification number issued by the Commission, signature and seal of the certified design professional.
(Signature, seal and Level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed)

3 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.

4 Provide the name, address, email address, and phone number of primary permittee.

5 Note total and disturbed acreage of the project or phase under construction.

6 Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.

7 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.

8 Description of the nature of construction activity.

9 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.

10 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.

11 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on Part IV page 21 of the permit.

12 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on Part IV page 20 of the permit.*

13 Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on Part IV D.6.c.(3) page 37 of the permit as applicable.*

14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements, perimeter control BMPs, and sediment basins within 7 days after installation." in accordance with Part IV A.5 page 26 of the permit.*

15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wooded vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."

16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.

17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional."*

18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit."

C012 Y 19 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."

C012 Y 20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."

C012 Y 21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."

C012 Y 22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment."

N/A 23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan."

C012 Y 24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited."

C012 Y 25 Provide BMPs for the remediation of all petroleum spills and leaks.

N/A 26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed."

N/A 27 Description of practices to provide cover for building materials and building products on site."

C021 Y 28 Description of the practices that will be used to reduce the pollutants in storm water discharges."

C014 Y 29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).

C012 Y 30 Provide complete requirements of inspections and record keeping by the primary permittee."

C013 Y 31 Provide complete requirements of sampling frequency and reporting of sampling results."

C013 Y 32 Provide complete details for retention of records as per Part IV.F. of the permit."

C013 Y 33 Description of analytical methods to be used to collect and analyze the samples from each location."

C013 Y 34 Appendix B rationale for NTU values at all outfall sampling points where applicable."

C016 Y 35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged also provide a summary chart of the justification and analysis for the representative sampling as applicable."

C014 Y 36 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase."

C014 Y 37 Graphic scale and North arrow.

C014 Y 38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Existing Contours	USGS 1": 2000' Topographical Sheets
Proposed Contours	1": 400' Centerline Profile

N/A 39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org.

N/A 40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition."

C014 Y 41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to State waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.

C014 Y 42 Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site.

N/A 43 Delineation and acreage of contributing drainage basins on the project site.

N/A 44 Delineate on-site drainage and off-site watersheds using USGS 1": 2000' topographical sheets.

C021 Y 45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.

N/A 46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.

C014 Y 47 Soil series for the project site and their delineation.

C014 Y 48 The limits of disturbance for each phase of construction.

C014 Y 49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.

C014 Y 50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.

C021 Y 51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.

C014 Y 52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

"If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream the * checklist items would be N/A."

Effective January 1, 2019

APPENDIX 1
THE ES&PC PLAN MUST INCLUDE AT LEAST FOUR (4) OF THE FOLLOWING BMPs FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO AN IMPAIRED STREAM SEGMENT AND FOR SITES WHICH EPD HAS APPROVED IN WRITING A REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME.
The four items chosen must be appropriate for the site conditions.

Plan Included
Page # Y/N

N a. During construction activities, double the width of the 25 foot undisturbed vegetated buffer along all State waters requiring a buffer and the 50 foot undisturbed vegetated buffer along all State waters classified as "trout streams" requiring a buffer. During construction activities, EPD will not grant variances to any such buffers that are increased in width.

N b. Increase all temporary sediment basins and retrofitted storm water management basins to provide sediment storage of at least 3600 cubic feet (134 cubic yards) per acre drained.

N c. Use baffles in all temporary sediment basins and retrofitted storm water management basins to at least double the conventional flow path length to the outlet structure.

N d. A large sign (minimum 4 feet x 8 feet) must be posted on site by the actual start date of construction. The sign must be visible from a public roadway. The sign must identify the following: (1) construction site, (2) the permittee(s), (3) the contact person(s) and telephone number(s), and (4) the permittee-hosted website where the Plan can be viewed must be provided on the submitted NOI. The sign must remain on site and the Plan must be available on the provided website until a NOT has been submitted.

N e. Use flocculants or coagulants and/or mulch to stabilize areas left disturbed for more than seven (7) calendar days in accordance with Section III. D.1. of the NPDES Permit.

N f. Conduct turbidity sampling after every rain event of 0.5 inch or greater within any 24 hour period, recognizing the exceptions specified in Section IV.D.6.d. of the NPDES Permits.

N g. Comply with the applicable end-of-pipe turbidity effluent limit, without the "BMP defense" as provided for in O.C.G.A. 12-7-6 (a)(1).

C012 Y h. Reduce the total planned site disturbance to less than 50% impervious surfaces (excluding any State-mandated buffer areas from such calculations). All calculations must be included on the Plan.

C012 Y i. Limit the amount of disturbed area at any one time to no greater than 25 acres or 50% of the total planned site, whichever is less. All calculations must be included on the Plan.

N j. Use "Dirt II" techniques available on the EPD website to model and manage construction storm water runoff (including sheet flow). All calculations must be included on the Plan. (<https://epd.georgia.gov/erosion-and-sedimentation>)

N k. Add appropriate organic soil amendments (e.g., compost) and conduct pre- and post-construction soil sampling to a depth of six (6) inches to document improved levels of soil carbon after final stabilization of the construction site.

N l. Use mulch filter berms. In addition to a silt fence, on the site perimeter wherever construction storm water (including sheet flow) may be discharged. Mulch filter berms cannot be placed in waterways or areas of concentrated flow.

N m. Use appropriate erosion control slope stabilization instead of concrete in all construction storm water ditches and storm drainages designed for a 25 year, 24 hour rainfall event.

N n. Use flocculants or coagulants under a passive dosing method (e.g., flocculant blocks) within construction storm water ditches and storm drainages that feed into temporary sediment basins and retrofitted management basins.

N o. Install sod for a minimum 20 foot width (in lieu of seeding) after final grade has been achieved, along the site perimeter wherever storm water (including sheet flow) may be discharged.

N p. Conduct soil tests to identify and to implement site-specific fertilizer needs.

C012 Y q. Certified personnel for primary permittees shall conduct inspections at least once every fourteen (14) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater in accordance with Section IV.D.4.a.(3)(a) - (c) of this permit.

N r. Apply the appropriate compost blankets (minimum depth 1.5 inches) to protect soil surfaces until vegetation is established during the final stabilization phase of the construction activity.

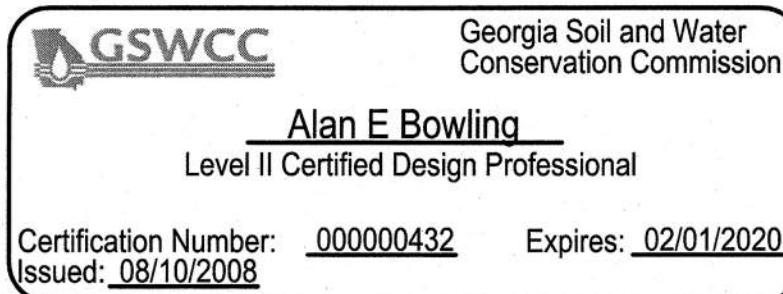
N s. Use alternative BMPs whose performance has been documented to be superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). (If using this item please refer to the Alternative BMP guidance document found at www.gaswcc.georgia.gov)

C012 Y t. Limit the total planned site disturbance to less than 15% impervious surfaces (excluding any state mandated buffer areas from such calculations). All calculations must be included in the Plan.

N u. Conduct inspections during the intermediate grading and drainage BMP phase and during the final BMP phase of the project by the design professional who prepared the Plan in accordance with Section IV.A.5 of the permit. The Plan must include a statement that the primary permittee must retain the design professional who prepared the Plan to conduct inspections during the intermediate grading and drainage BMP phase and during the final BMP phase.

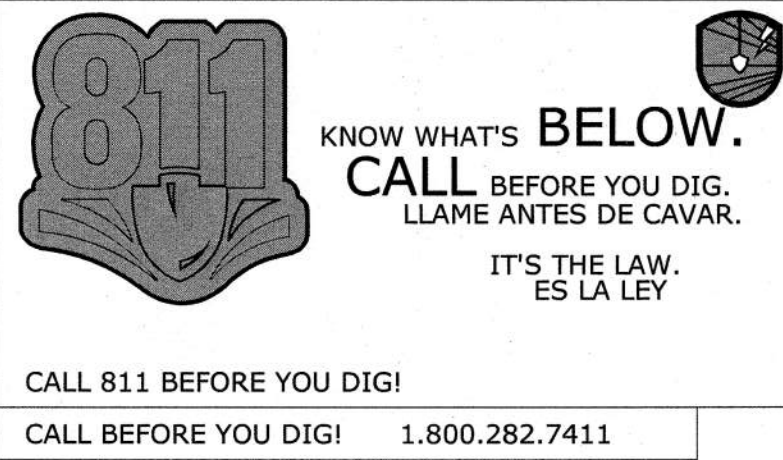
N v. Install Post Construction BMPs (e.g., runoff reduction BMPs) which remove 80% TSS as outlined in the Georgia Stormwater Management Manual known as the Blue Book or an equivalent or more stringent design manual.

Effective January 1, 2019



OWNER/PRIMARY PERMITTEE:
DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY
8763 HOSPITAL DRIVE
DOUGLASVILLE, GA 30134
PH. (770) 920-3819
MBACA@DDCWSA.COM

24-HOUR CONTACT
NAME: MIGUEL A. BACA, P.E.
PHONE: (770) 920-3819



PROJECT ENGINEER: D. EHRHARDT
DESIGNED BY: B. MOSS
DRAWN BY: J. JORDAN
CHECKED BY: D. EHRHARDT
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
0 1/2" 1"

100% SUBMITTAL

REV ISSUED FOR DATE BY



Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY
STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



EROSION SEDIMENTATION
AND POLLUTION CONTROL
PLAN
CIVIL
ESC PLAN CHECKLIST

DATE: MAY 2019
HAZEN NO.: 31247-010
CONTRACT NO.: 22B4413-02
DRAWING NUMBER: C020

GRASSING SCHEDULE

(HYDROSEEDING RATES)

Species	PLS* RATE/1000 S.F.	DATES	LIME	N ₂	P ₂ O ₅	K ₂ O
HULLED BERMUDA	0.2 LBS	3/1 TO 7/1	1 TON/ACRE	60 TO 90	120 TO 180	120 TO 180
UNHULLED BERMUDA	0.2 LBS	10/1 TO 3/1	1 TON/ACRE	60 TO 90	120 TO 180	120 TO 180
FESCUE	1.1 LBS	8/11 TO 11/1	1 TON/ACRE	60 TO 90	120 TO 180	120 TO 180

Species	PLS* RATE/1000 S.F.	DATES	LIME	N ₂	P ₂ O ₅	K ₂ O
WINTER RYE	3.0 LBS	8/15 TO 1/1	1 TON/ACRE	60 TO 90	120 TO 180	120 TO 180
**WEEDING LOVEGRASS	0.1 LBS	3/8 TO 6/21	1 TON/ACRE	60 TO 90	120 TO 180	120 TO 180
BROWN TOP MILLET	0.9 LBS	4/1 TO 7/21	1 TON/ACRE	60 TO 90	120 TO 180	120 TO 180

*PLS = PURE LIVE SEED (PURITY x GERMINATION)
**HYDROSEED ON ALL 2:1 (H:V) SLOPES.

MULCHING RATES AND MATERIALS

TEMPORARY MULCHING:
DRY STRAW AND HAY SHALL BE APPLIED AT A DEPTH OF 2" TO 4" PROVIDING SOIL COVERAGE AND/OR WOOD WASTE SHALL BE APPLIED AT A DEPTH OF 2" TO 3" PROVIDING SOIL COVERAGE. THE AREA SHOULD BE EVENTUALLY COVERED WITH 20 TO 30 LBS OF NITROGEN PER ACRE IN ADDITION TO THE NORMAL AMOUNT DUE TO ORGANIC COMPOSITION.

PERMANENT MULCHING:
DRY STRAW OR HAY OF GOOD QUALITY FREE OF WEEDS SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE FOR STRAW AND 2.5 TONS PER ACRE FOR HAY. WOOD MULCH SHALL BE USED WITH HYDRAULIC SEEDING AND APPLIED AT A RATE OF 500 LBS PER ACRE. PINE STRAW (FOR BEDDING PURPOSES ONLY) SHALL BE APPLIED AT A THICKNESS OF 3".

STRAW OR HAY SHALL BE SPREAD UNIFORMLY WITHIN 24 HOURS AFTER SEEDING OR PLANTING AND APPLIED TO COVER ABOUT 75% OF THE SOIL SURFACE.

Ds1 NOTE: TEMPORARY STABILIZATION (MULCHING ONLY) WHEN SEEDING WILL NOT HAVE A SUITABLE GROWING SEASON MAY BE ACCOMPLISHED WITH: STRAW AT 2 TONS/ACRE OR HAY AT 2.5 TONS/ACRE WOOD WASTE, BARK, SAWDUST: 2" TO 3" DEEP (APPROX. 6 TO 9 TONS/ACRE)

EROSION, SEDIMENTATION AND POLLUTION CONTROL PROJECT NARRATIVE:

THE PROJECT CONSISTS OF THE REPLACEMENT OF 3,923 LF OF 21-INCH GRAVITY SEWER LINE WITH 24-INCH GRAVITY SEWER LINE ALONG THE SAME ALIGNMENT.

THE LENGTH OF THE CONSTRUCTION ACTIVITIES RUN ALONG ANNAEWAKEE CREEK. SOME PORTIONS OF THE PROJECT EXTEND INTO THE 25-FOOT UNDISTURBED STREAM BUFFER. GA EPD STREAM BUFFER VARIANCE BV-048-18-01 HAS BEEN RECEIVED FOR THIS PROJECT, APPROVED JULY 10, 2018.

THE PROJECT SITE CONTAINS A VARIETY OF SOIL TYPES. STATE WATERS EXIST WITHIN 200 FEET OF THE LIMITS OF CONSTRUCTION.

- EIGHT (8) TYPES OF EROSION CONTROL MEASURES SHALL BE UTILIZED IN THE CONSTRUCTION OF THE PROJECT.
1. SILT FENCE (Sd1-C) SHALL BE INSTALLED AT APPROPRIATE LOCATIONS TO PREVENT SEDIMENT FROM BEING WASHED OFF OF THE SITE.
 2. CONSTRUCTION EXITS (Co) SHALL BE INSTALLED WHERE CONSTRUCTION VEHICLES EXIT THE CONSTRUCTION AREA ONTO PAVED ROADWAYS TO REDUCE OR ELIMINATE THE TRANSPORT OF MUD FROM THE CONSTRUCTION SITE.
 3. INLET SEDIMENT TRAPS (Sd2) SHALL BE USED TO REDUCE OR ELIMINATE THE AMOUNT OF SEDIMENT ENTERING YARD INLETS.
 4. STONE CHECK DAMS (Cd-S) SHALL BE USED IN AREAS OF CONCENTRATED FLOW TO REDUCE VELOCITY AND ALLOW SOME SUSPENDED SEDIMENT TO DEPOSIT.
 5. TEMPORARY AND PERMANENT GRASSING (Ds2 & Ds3) SHALL BE USED TO REESTABLISH VEGETATION ON THE DISTURBED AREAS AS CONSTRUCTION PROCEEDS.
 6. TEMPORARY MULCHING (Ds1) SHALL BE USED TO REDUCE RUNOFF AND EROSION.
 7. SLOPE MATTING (Mb) SHALL BE INSTALLED ON STEEP SLOPES TO REINFORCE THE GROUND SURFACE, REDUCE EROSION, AND PROVIDE A PROTECTIVE COVERING.
 8. DUST CONTROL (Du) SHALL BE USED TO CONTROL SURFACE AND AIR MOVEMENT OF DUST ON CONSTRUCTION SITES AND ROADS.

THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL SHALL BE IMPLEMENTED IN THREE PHASES. PHASE I (CLEARING) SHALL CONSIST OF INSTALLING BMPs FOR SITE PREPARATION, INCLUDING SILT FENCE ON SLOPES WITHIN THE PROJECT AREA, TREE PROTECTION FENCE ALONG THE LIMITS OF THE PROJECT AREA, AND CONSTRUCTION ENTRANCES/EXITS SO EQUIPMENT CAN BE BROUGHT ONTO THE SITE. PHASE II (GRADING) SHALL CONSIST OF INSTALLING BMPs FOR CONSTRUCTION, INCLUDING INLET SEDIMENT TRAPS WHERE SEDIMENT COULD POTENTIALLY ENTER STORM DRAINS AND STONE CHECK DAMS WHERE OVERLAND FLOW IS CONCENTRATED IN DITCHES. PHASE III SHALL CONSIST OF SITE RESTORATION, INCLUDING ALL PERMANENT VEGETATION. ONCE CONSTRUCTION OF THE FACILITY IS COMPLETE AND THE DISTURBED AREAS ARE PERMANENTLY VEGETATED, THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PERIMETER DEVICES CAN BE REMOVED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF A STRONG STAND OF GRASS BEFORE BEING RELEASED FROM HIS CONTRACTUAL OBLIGATIONS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR A PERIOD OF TWELVE MONTHS AFTER ACCEPTANCE OF THE PROJECT TO REPAIR ANY WASHOUT AREAS, ETC.

NO ADDITIONAL IMPERVIOUS AREAS WILL BE ADDED, AND STORMWATER DRAINAGE PATTERNS WILL NOT BE AFFECTED DUE TO CONSTRUCTION ACTIVITIES. THEREFORE, A HYDROLOGY STUDY WOULD NOT BE PRODUCTIVE AND IS NOT INCLUDED IN THE CONSTRUCTION DOCUMENTS.

THIS PROJECT DISCHARGES INTO AND IS WITHIN ONE LINEAR MILE OF AN IMPAIRED STREAM SEGMENT. ADDITIONAL BMPs SATISFYING THE REQUIREMENTS OF PART III.C HAVE BEEN INCLUDED IN THESE PLANS. SEE DWG C012 FOR ADDITIONAL BMPs. A TMDL IMPLEMENTATION PLAN HAS BEEN ISSUED FOR THIS IMPAIRED STREAM SEGMENT. ALL NECESSARY MEASURES TO SATISFY THE REQUIREMENTS OF THE TMDL IMPLEMENTATION PLAN HAVE BEEN INCLUDED IN THE EROSION, SEDIMENTATION & POLLUTION CONTROL PLANS.

PRE-CONSTRUCTION RUNOFF COEFFICIENT: 0.40
POST-CONSTRUCTION RUNOFF COEFFICIENT: 0.40

CHECK DAM (Cd)

PURPOSE

- REDUCE VELOCITY
- FILTER SEDIMENT
- STABILIZE GRADE

INSTALLATION

- INSTALL ACCORDING TO APPROVED PLAN AS SHOWN.
- PLACE IN SMALL, OPEN CHANNELS, NOT IN LIVE STREAMS.
- CONSTRUCT CENTER AT LEAST 9" LOWER THAN OUTER EDGES.
- EXTEND ACROSS ENTIRE WIDTH OF DITCH OR SWALE.
- MAKE SIDE SLOPES 2:1 OR FLATTER.
- TOE OF THE UPSTREAM DAM SHOULD BE AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
- SEED AND MULCH AREA BENEATH THE DAM AFTER ITS REMOVAL.

(Cd-S)

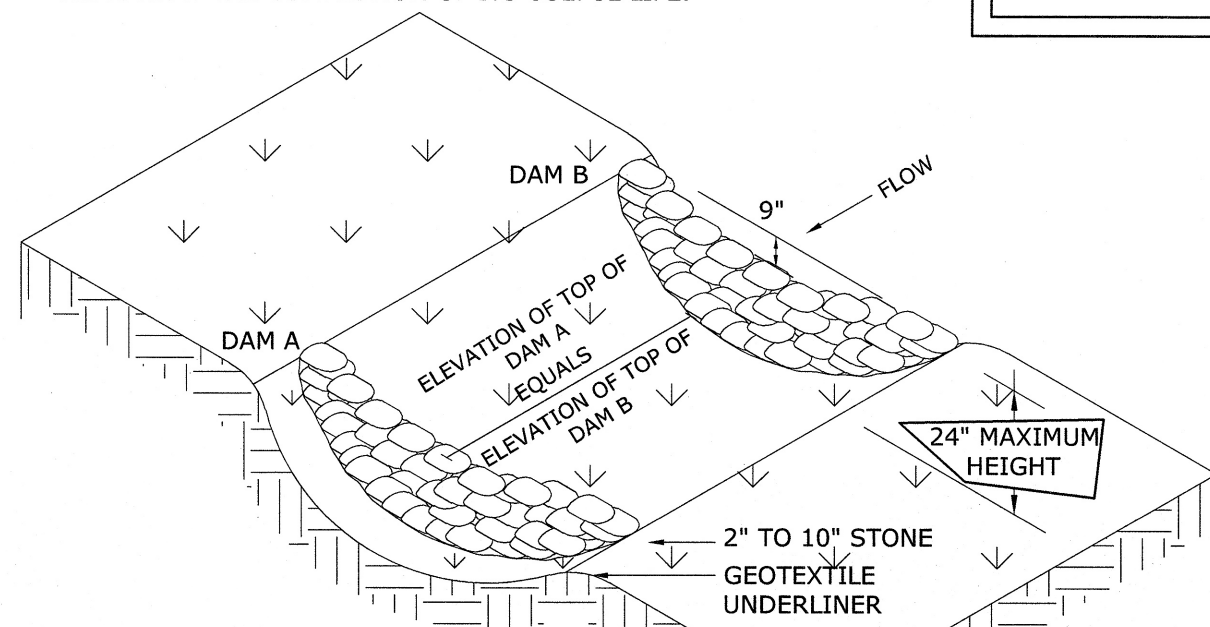
- STONE CHECK DAMS
- DRAINAGE AREA NOT TO EXCEED 2 ACRES.
- CONSTRUCTED OF GRADED SIZE 2"-10" STONE.
- 2" MAXIMUM DAM HEIGHT MEASURED TO CENTER OF CHECK DAM.
- PLACE A SUITABLE GEOTEXTILE BETWEEN THE ROCK AND ITS SOIL BASE AND ABUTMENTS.

HAYBALE CHECK DAMS

- DRAINAGE AREA NOT TO EXCEED 1 ACRE.
- STAKE AND EMBE A MINIMUM OF 4".

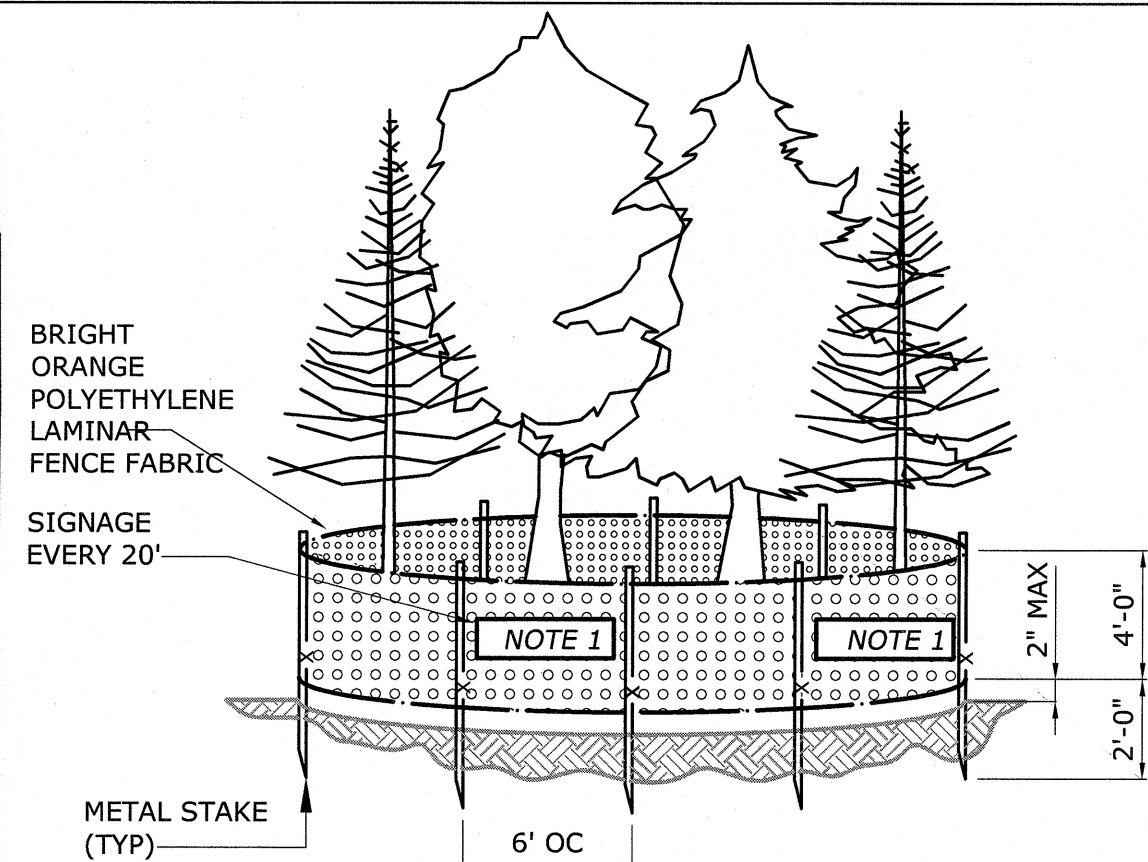
MAINTENANCE

- PERIODIC INSPECTION AND MAINTENANCE REQUIRED.
- REMOVE SEDIMENT WHEN IT REACHES A DEPTH OF ONE-HALF THE ORIGINAL DAM HEIGHT.
- REMOVE AT THE COMPLETION OF ITS USEFUL LIFE.



CHECK DAM

A SMALL TEMPORARY BARRIER CONSTRUCTED ACROSS A SWALE, DRAINAGE DITCH, OR AREA OF CONCENTRATED FLOW.



NOTE 1: SIGNAGE SHALL BE PROVIDED WITH ALL FENCING AND SHALL STATE "STAY OUT", "NO ENTRADA", "TREE SAVE", AND "SALVE UN ARBOL" IN ALL LOCATIONS WHERE SIGNAGE IS POSTED.

0249104R

TREE PROTECTION FENCE

NOT TO SCALE

DUST CONTROL (Du)

PURPOSE

- PREVENT THE MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES.
- PREVENT THE MOVEMENT OF AIRBORNE SUBSTANCES THAT MAY BE HARMFUL TO HEALTH.

INSTALLATION

- APPLY ACCORDING TO APPROVED PLAN, IF SHOWN.
- COVER SURFACES WITH CRUSHED STONE OR GRAVEL.
- APPLY CALCIUM CHLORIDE AT A RATE TO KEEP SURFACES MOIST.
- APPLY SPRAY-ON ADHESIVES TO MINERAL SOILS (NOT MUCK SOILS) AS DESCRIBED IN TABLE 1.

MAINTENANCE

- PROHIBIT TRAFFIC ON SURFACE AFTER SPRAYING.
- SUPPLEMENT SURFACE COVERING AS NEEDED.
- MULCH DISTURBED AREAS AND TACKIFY WITH RESINS SUCH AS ASPHALT, CURASOL OR TERRATAK ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION.
- IRRIGATE DISTURBED AREAS UNTIL SURFACE IS WET.

TABLE 1 - SPRAY-ON ADHESIVE APPLICATION REQUIREMENTS

ADHESIVE	WATER DILUTION	NOZZLE TYPE	APPLICATION (GAL./ACRE)
ANIONIC ASPHALT EMULSION	7:1*	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1*	FINE SPRAY	235
RESIN-IN-WATER EMULSION	4:1*	FINE SPRAY	300

*USE MANUFACTURER'S RECOMMENDATIONS WHEN AVAILABLE.

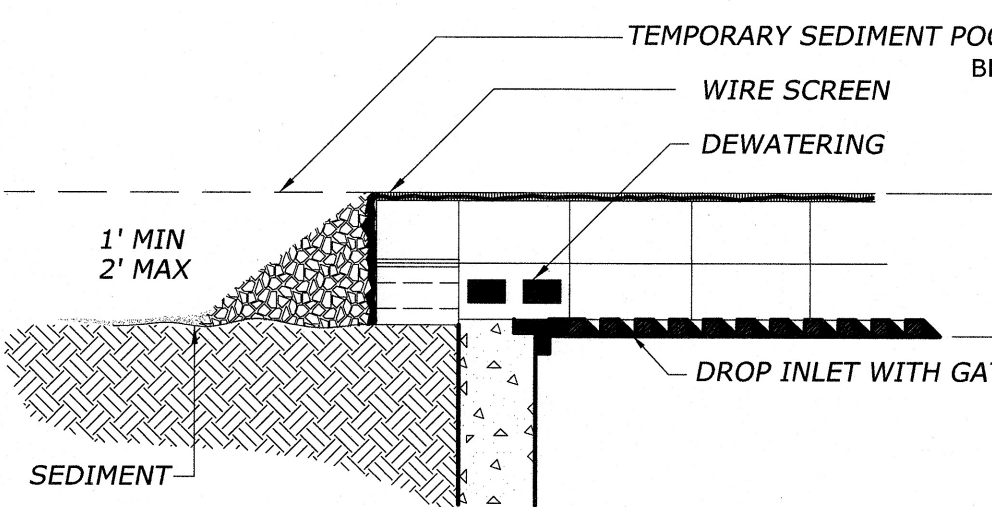
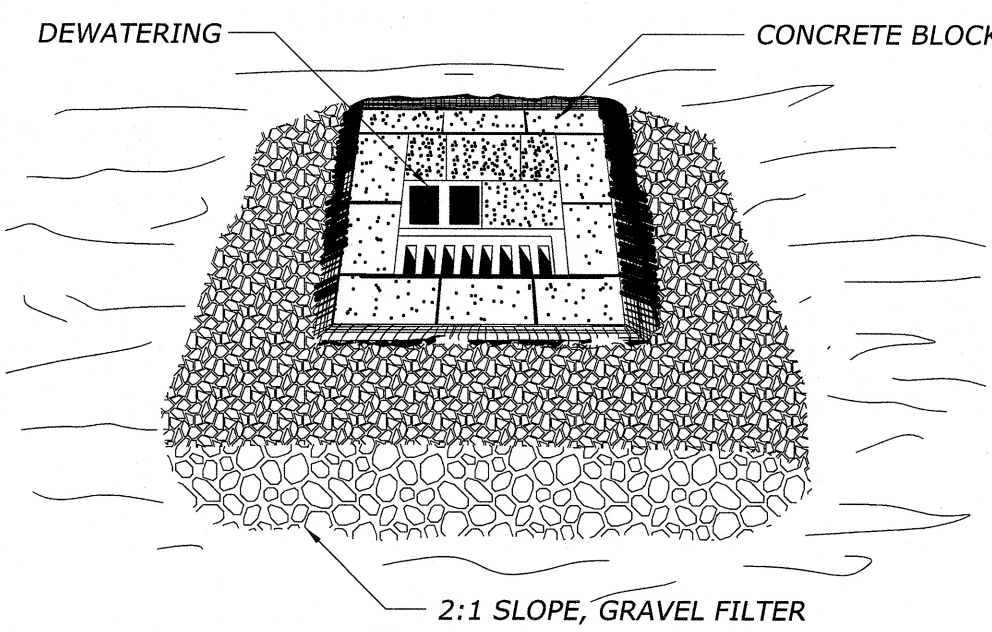
INLET SEDIMENT TRAP (Sd2)

PURPOSE

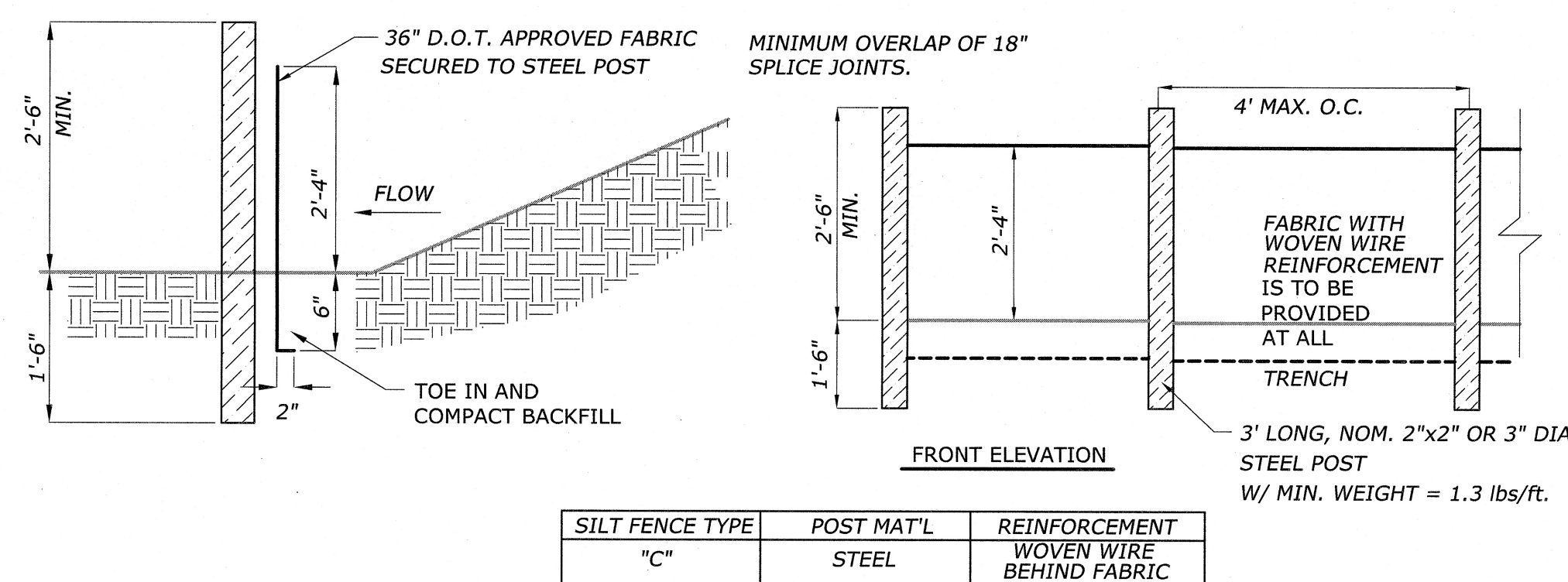
PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS.

INSTALLATION

- INSTALL ACCORDING TO APPROVED PLAN, IF SHOWN.
- DO NOT INSTALL WHERE VEHICULAR TRAFFIC WILL BE AFFECTED.
- INSTALL AT OR AROUND ALL STORM DRAIN DROP INLETS THAT RECEIVE RUNOFF FROM DISTURBED AREAS.
- CONSTRUCT ON NATURAL GROUND SURFACE, EXCAVATED SURFACE, OR ON MACHINE COMPACTED FILL.
- EXCAVATED INLET SEDIMENT TRAP
- MINIMUM OF 1.5' OF SEDIMENT STORAGE IN EXCAVATED SEDIMENT TRAPS.
- MUST BE SELF-DRAINING UNLESS OTHERWISE PROTECTED.



- EXCAVATE FOUNDATION AT LEAST 2" BELOW THE CREST OF THE STORM DRAIN.
- ON EACH SIDE OF THE STRUCTURE, PLACE ONE BLOCK IN THE BOTTOM ROW ON ITS SIDE TO ALLOW POOL DRAINAGE.
- PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN.
- ADD SUPPORT BY PLACING 2"x4" WOOD STUDS THROUGH BLOCK OPENINGS.
- FIT HARDWARE CLOTH OR WIRE MESH WITH 1/2" OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
- PLACE CLEAN GRAVEL 2" BELOW THE TOP OF THE BLOCK ON A 2:1 OR FLATTER SLOPE AND SMOOTH IT TO AN EVEN GRADE. GDOT #57 STONE IS RECOMMENDED.



SILT FENCE TYPE	POST MAT'L	REINFORCEMENT
"C"	STEEL	WOVEN WIRE BEHIND FABRIC

NOTES:

1. EXTRA STRENGTH FILTER FABRIC (AS APPROVED BY ENGINEER) WITH 4'-0" POST SPACING DOES NOT REQUIRE MESH SUPPORT FENCE.
2. FILTER FABRIC SHALL BE WIRED DIRECTLY TO POST.
3. REINFORCED TYPE "C" SILT FENCING IS REQUIRED WHERE SLOPES EXCEED 2:1 OR AS REQUIRED BY ENGINEER.
4. FILTER FABRIC MUST BE SUPPORTED WITH 4'-0" POST SPACING AT LOCATIONS NEAR (WITHIN 25') OF SEDIMENT PONDS.
5. WHERE DOUBLE ROWS OF SILT FENCING ARE SPECIFIED OR ORDERED BY ENGINEER, CONTRACTOR SHALL SPACE ROWS 2' APART.
6. ALL SILT FENCE SHALL BE TYPE "C".

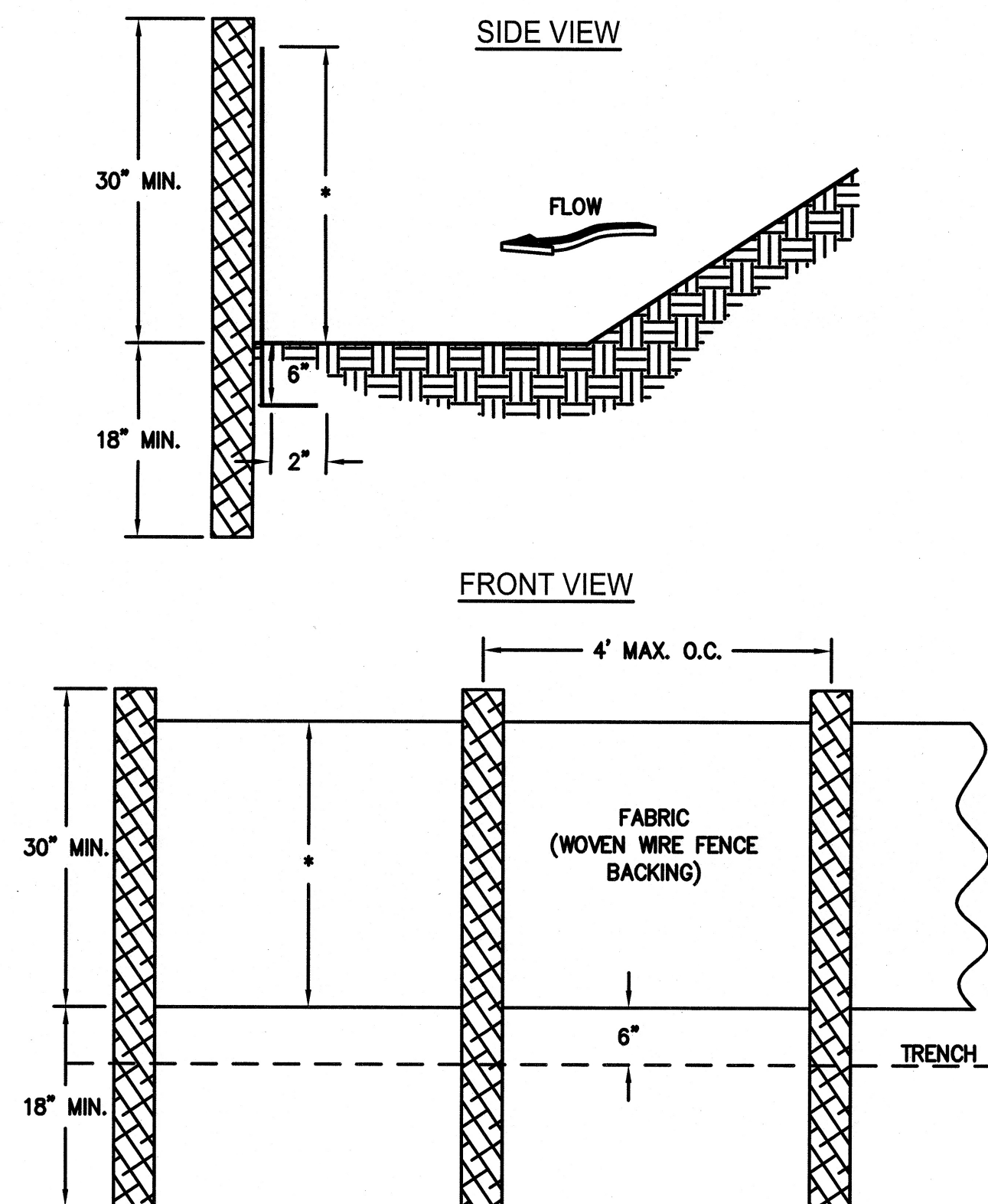
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SILT FENCING (Sd1-C)

		APPENDIX B NEPHELOMETRIC TURBIDITY UNIT (NTU) TABLES									
		TROUT STREAMS SURFACE WATER DRAINAGE AREA, SQUARE MILES									
SITE SIZE, ACRES		0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+		
		1.0-10	10.01-25	25.01-50	50.01-100	100.01+	1.0-10	10.01-25	25.01-50	50.01-100	100.01+
		25	25	25	25	25	300	500	500	500	500
		25	25	25	25	25	100	200	500	500	500
		25	25	25	25	25	100	300	500	500	500
		25	25	25	25	25	50	150	300	500	500
		25	25	25	25	25	50	60	100	100	100

		WATERS SUPPORTING WARM WATER FISHERIES SURFACE WATER DRAINAGE AREA, SQUARE MILES									
SITE SIZE, ACRES		0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+		
		1.0-10	10.01-25	25.01-50	50.01-100	100.01+	1.0-10	10.01-25	25.01-50	50.01-100	100.01+
		75	150	200	400	750	750	750	750	750	750
		50	100	100	200	300	500	750	750	750	750
		50	50	100	100	200	300	750	750	750	750
		50	50	50	100	100	150	300	600	600	600
		50	50	50	50	50	100	200	100	100	100

SILT FENCE - TYPE SENSITIVE

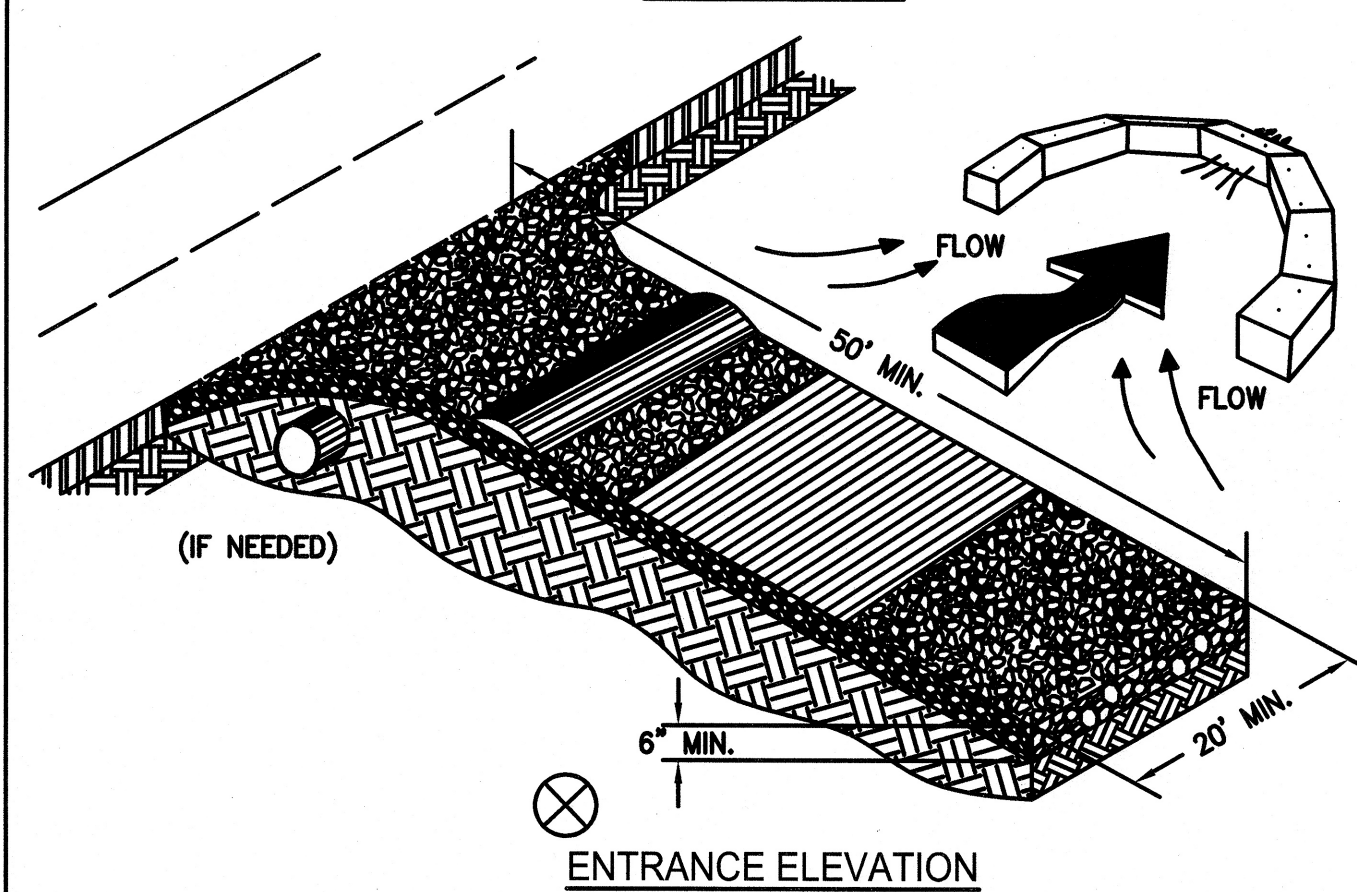


NOTES:

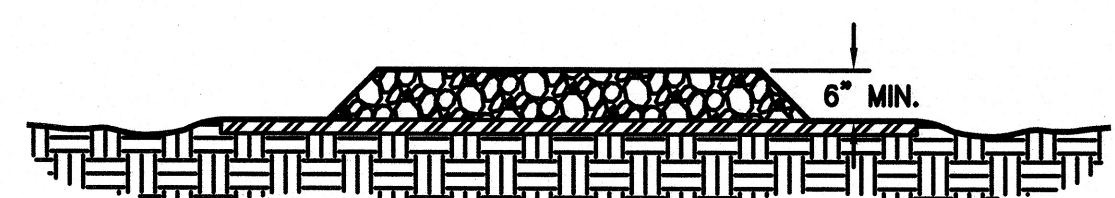
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



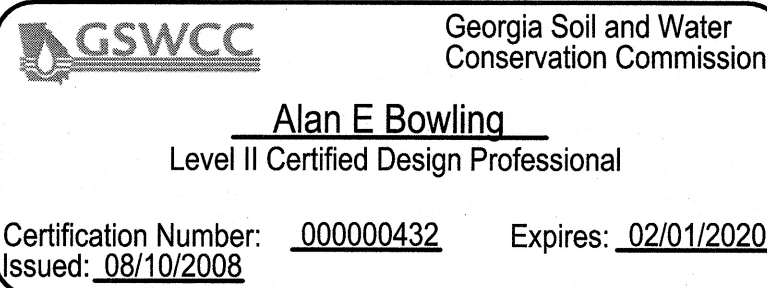
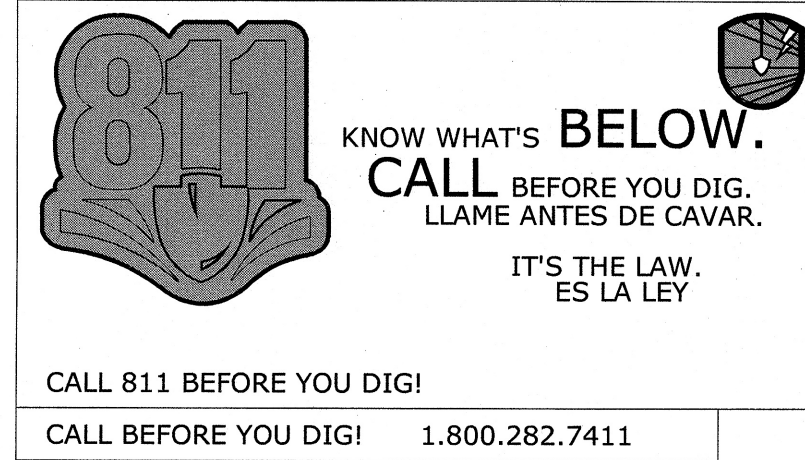
ENTRANCE ELEVATION



NOTES:

1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2K.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

TOTAL DISTURBED AREA = 4.79 ACRES




OWNER/PRIMARY PERMITTEE:
DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY
8763 HOSPITAL DRIVE
DOUGLASVILLE, GA 30134
PH. (770) 920-3819
MBACA@DDCWSA.COM

24-HOUR CONTACT

NAME: MIGUEL A. BACA, P.E.

PHONE: (770) 920-3819

					PROJECT ENGINEER:	D. EHRHARDT
					DESIGNED BY:	T. SCHUELER
					DRAWN BY:	S.KANE
					CHECKED BY:	D. EHRHARDT
					IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
						
REV	ISSUED FOR	DATE	BY			

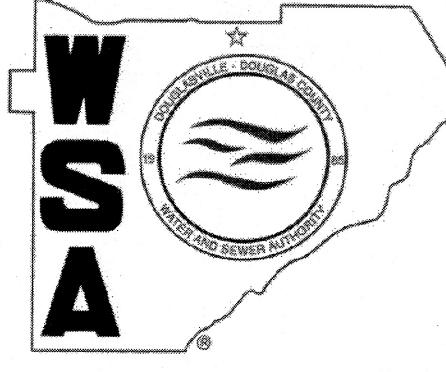
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Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD,
SUITE D-520
ATLANTA, GA 30342

DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

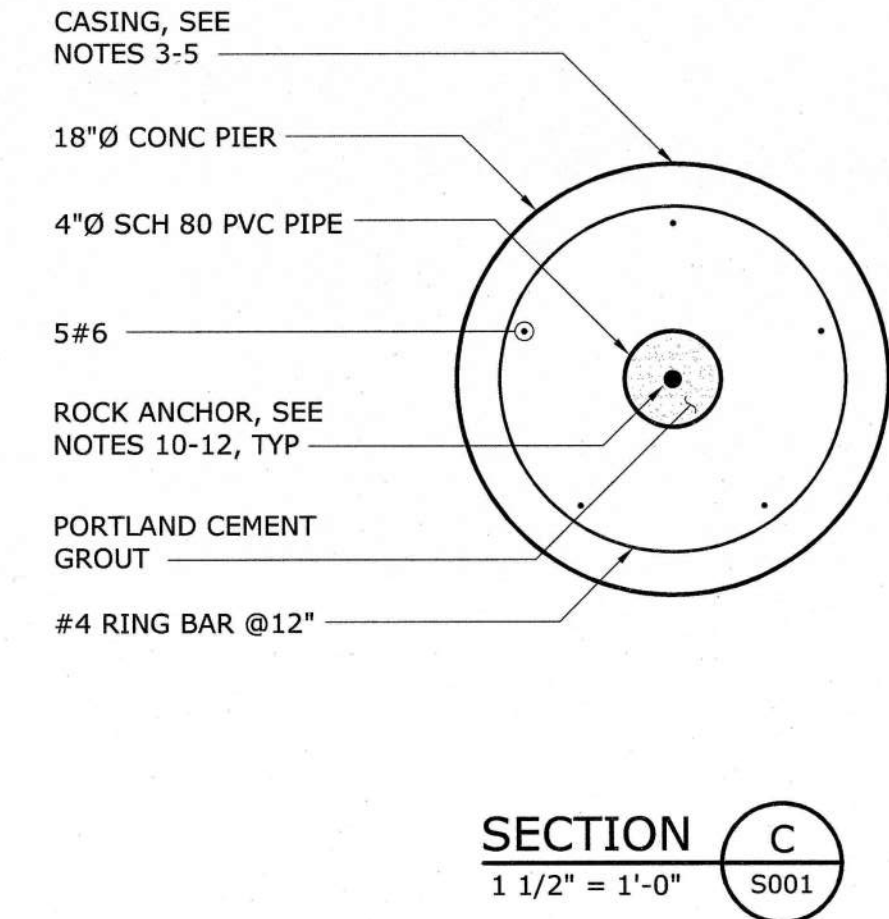
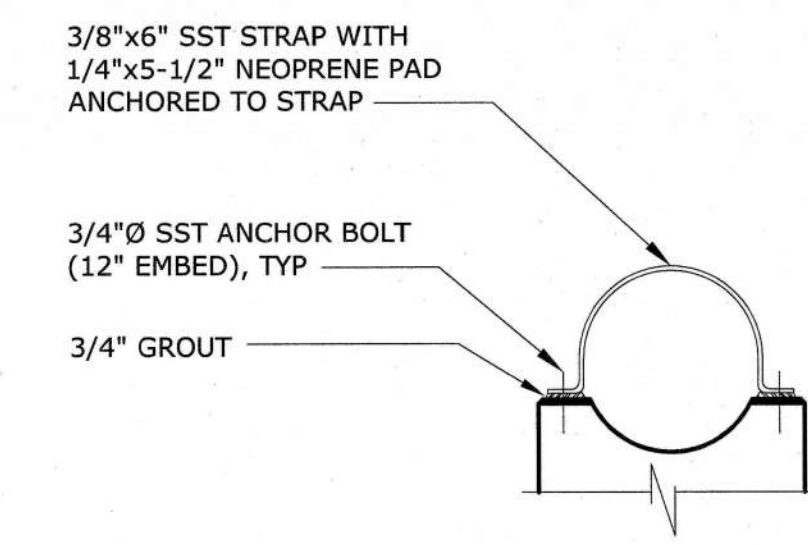
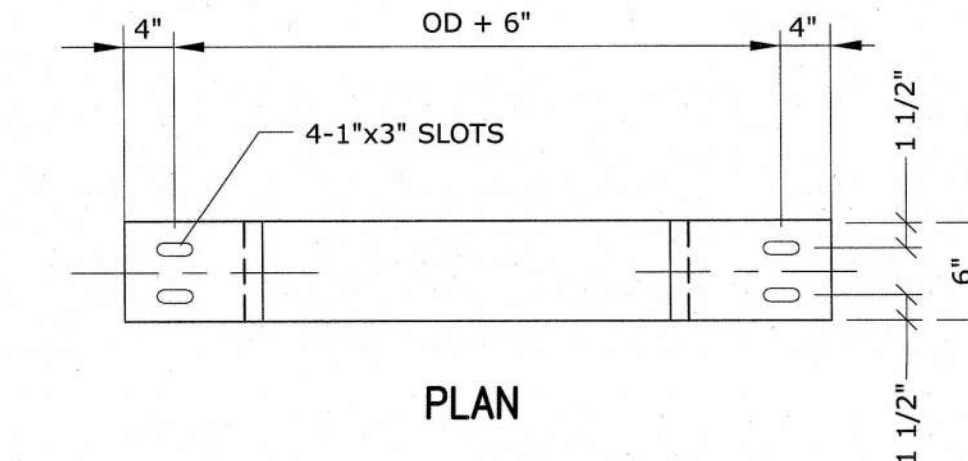
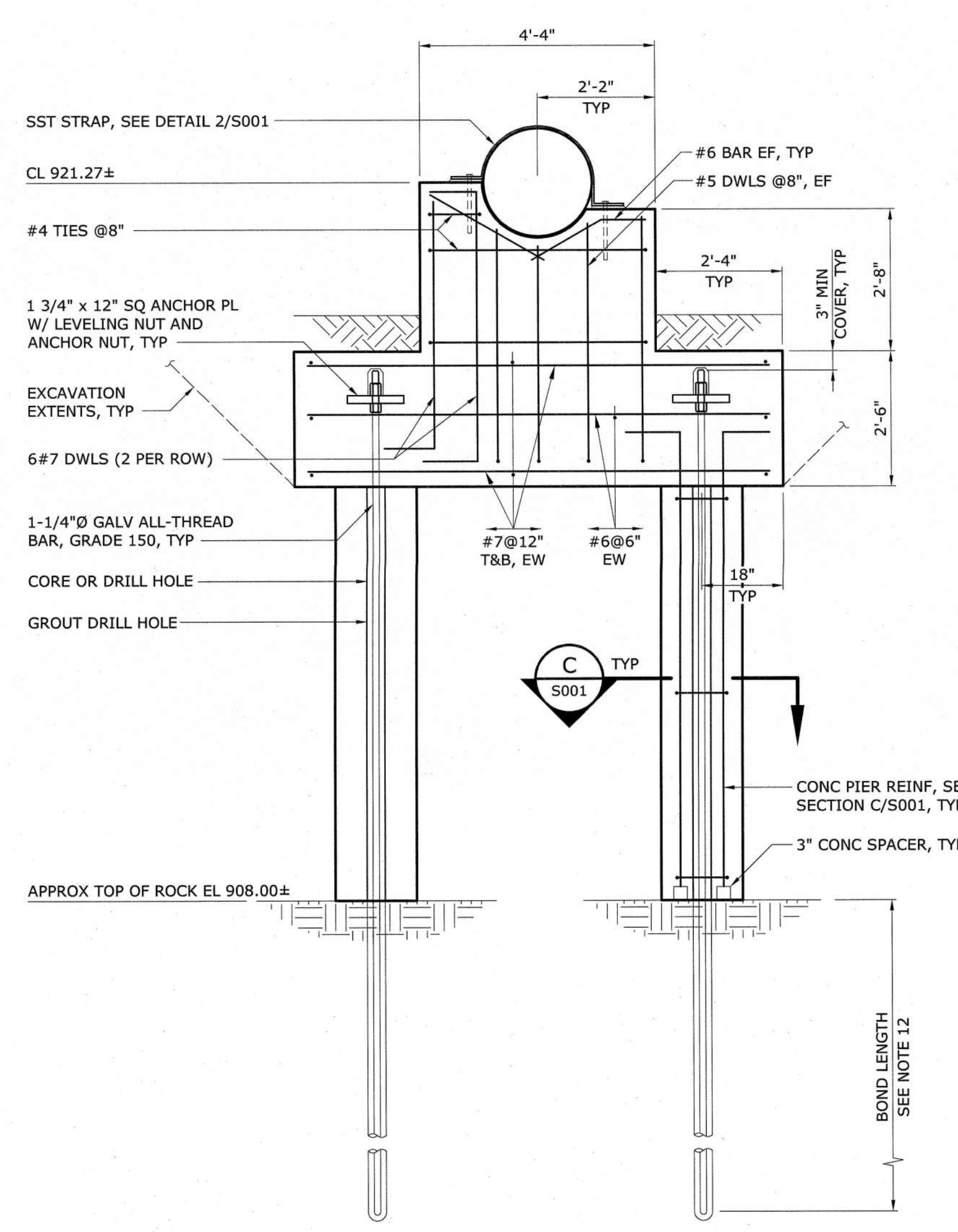
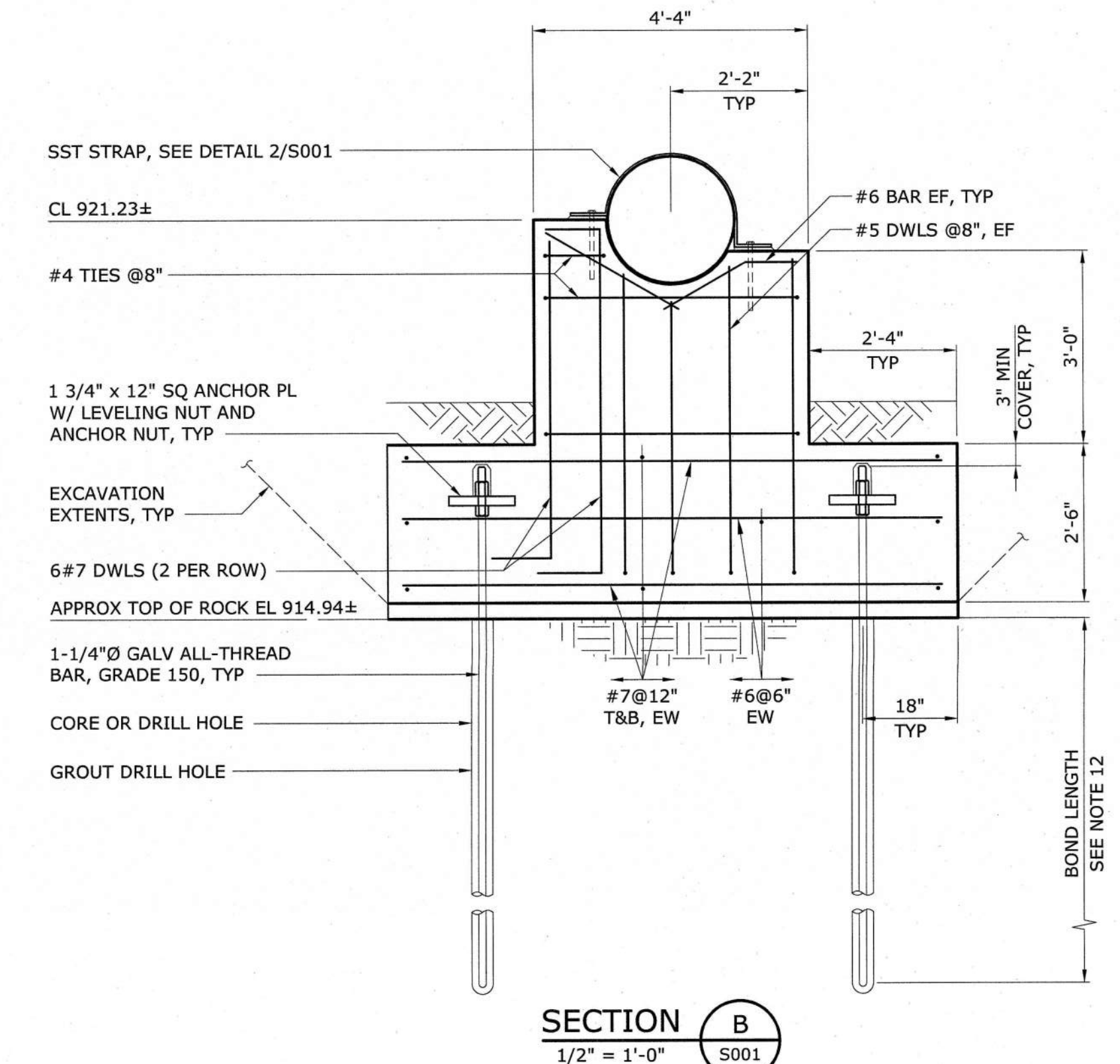
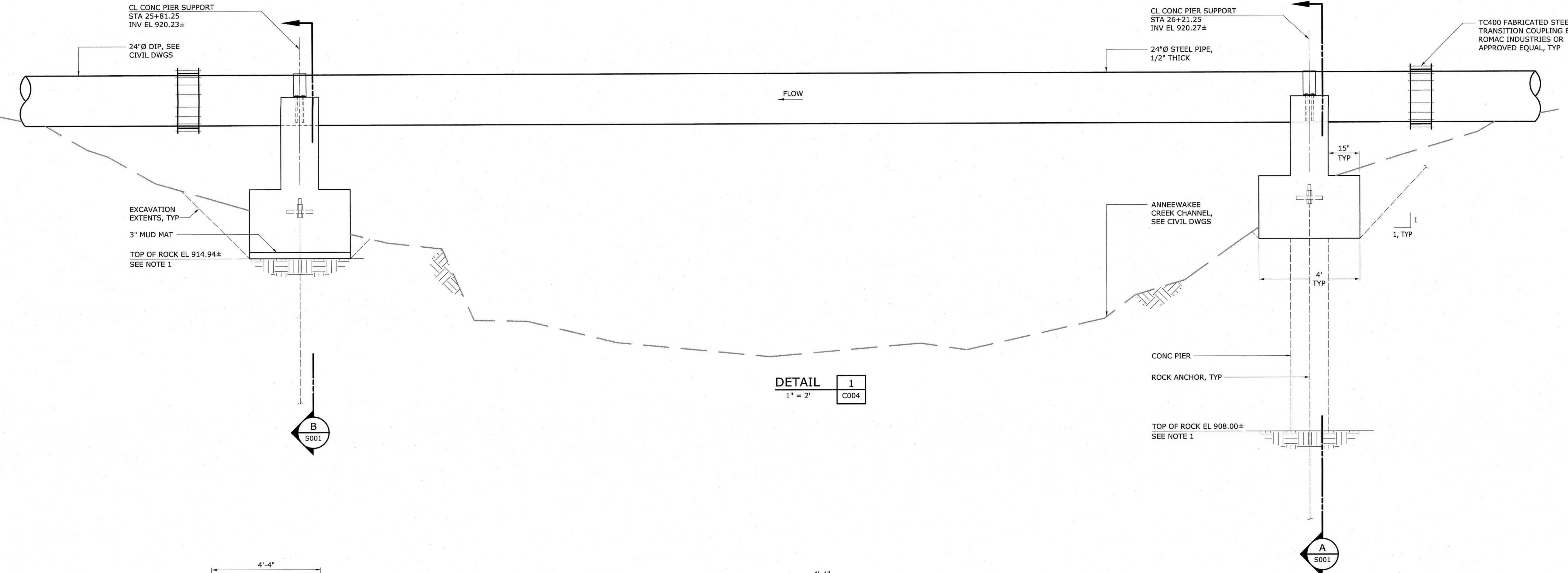
STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT




EROSION SEDIMENTATION AND
POLLUTION CONTROL PLAN
CIVIL
DETAILS

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	C021

- NOTES:
- ROCK SURFACE ELEVATION SHALL BE FIELD VERIFIED.
 - CONSTRUCTION IN AND AROUND CREEK SHALL FOLLOW EROSION AND SEDIMENTATION PROCEDURES PER SPECIFICATIONS.
 - TEMPORARY CASINGS SHALL BE PROVIDED FOR ALL CONCRETE PIERS AND PROPERLY SEATED AND SEALED TO PREVENT SEEPAGE OF WATER INTO DRILLED SHAFT EXCAVATION.
 - DRILL 18" DIAMETER CASING FROM WORKING GRADE TO TOP OF ROCK ELEVATION AND CLEAN OUT INSIDE OF CASING TO FULL DEPTH.
 - AFTER CASING CONDITION IS APPROVED BY ENGINEER, INSTALL CORE REINFORCEMENT AND REBAR CAGE. PLACE CONCRETE BY TREMIEING. SUFFICIENT HEAD OF PLASTIC CONCRETE SHALL BE MAINTAINED WITHIN THE CASING DURING EXTRACTION.
 - STEEL CORE REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 75.
 - STEEL CAGE REINFORCEMENT SHALL BE DEFORMED NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60.
 - FOR ROCK ANCHOR TYPE, MATERIAL & INSTALLATION PROCEDURES, SEE SPECIFICATION SECTION 02216.
 - ROCK ANCHORS SHALL HAVE A WORKING DESIGN CAPACITY OF 40T (80 KIIPS).
 - ROCK ANCHOR DRILL HOLE SIZE SHALL BE 4"Ø AND BOND LENGTH SHALL BE 15'-0" MINIMUM INTO UNDERLYING ROCK. AFTER EXCAVATION IS COMPLETE AND BEFORE MUD MAT IS PLACED, ENGINEER SHALL INSPECT BOTTOM OF EXCAVATION AND CONFIRM ROCK ANCHOR DESIGN ASSUMPTIONS.
 - PRIOR TO ROCK ANCHOR INSTALLATION THROUGH CENTER ON CONCRETE PIER, CONCRETE SHALL REACH 70% OF 28-DAY COMPRESSIVE STRENGTH.
 - FRACTURED ROCK, LOOSE, AND UNSUITABLE MATERIAL WITHIN THE SUBGRADE SHALL BE REMOVED AND REPLACED WITH CONCRETE FILL AS APPROVED BY THE ENGINEER.



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PLOT DATE: 6/25/19 9:03 AM BY: JACOB

					PROJECT ENGINEER:	D. EHRHARDT
					DESIGNED BY:	G. JOHNSON
					DRAWN BY:	G. JOHNSON
					CHECKED BY:	F. POWELL
					IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
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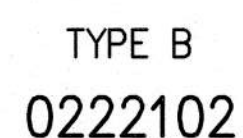
DOUGLASVILLE-DOUGLAS COUNTY
WATER AND SEWER AUTHORITY

STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT

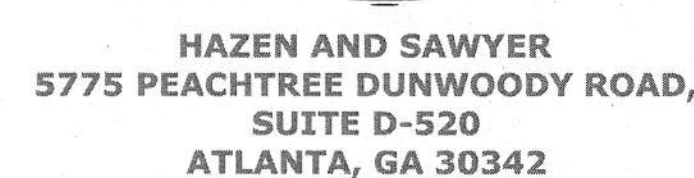


AERIAL PIPE CROSSING
STRUCTURAL
SECTION AND DETAIL

DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	S001

0222109

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STEWART MILL ROAD SANITARY SEWER
REPLACEMENT PROJECT



DATE:	MAY 2019
HAZEN NO.:	31247-010
CONTRACT NO.:	22B4413-02
DRAWING NUMBER:	D001